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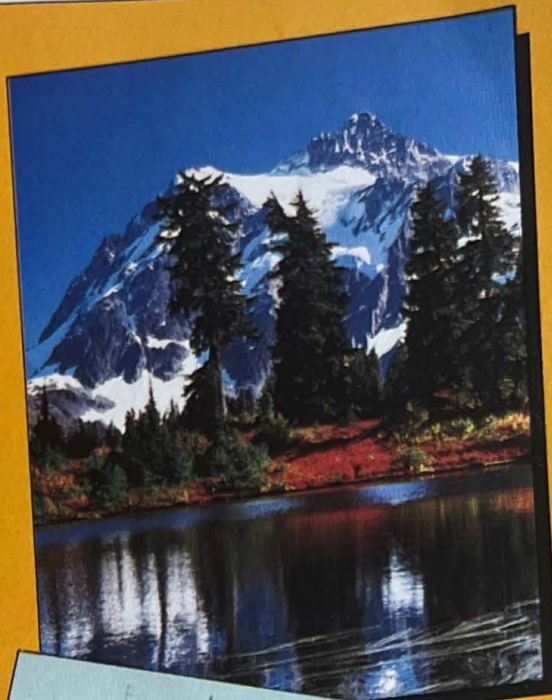
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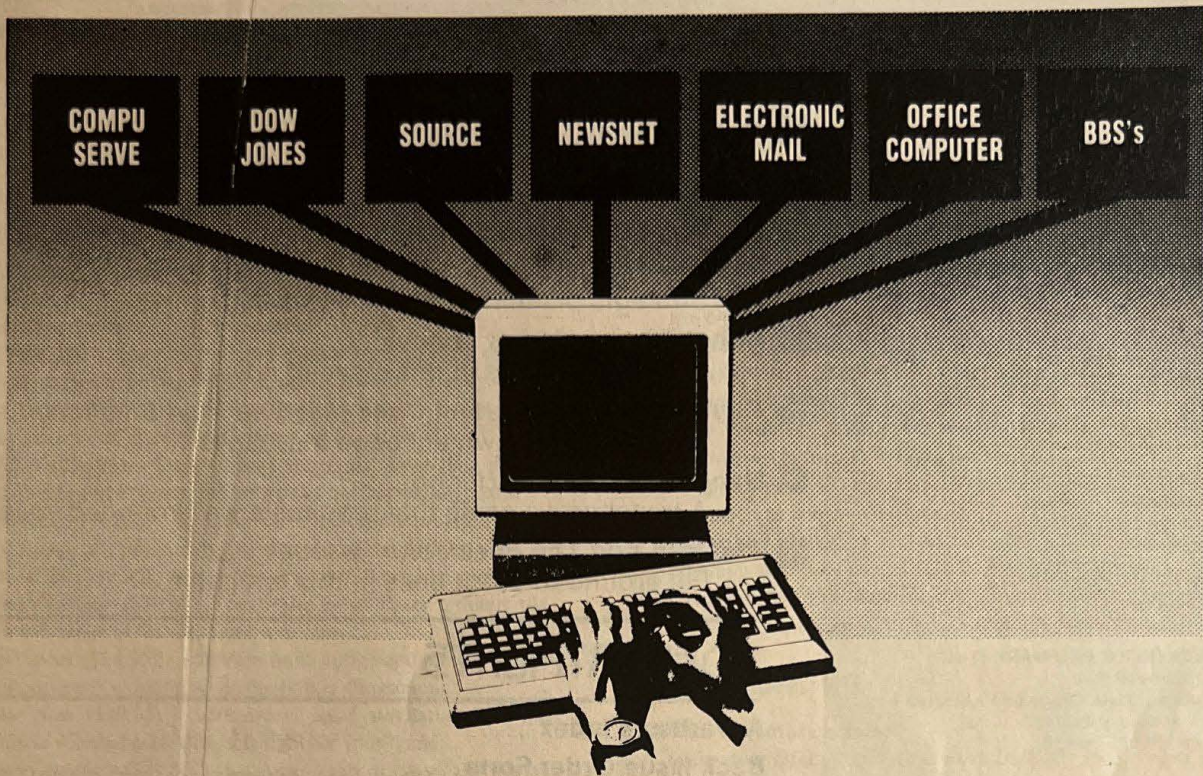
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Sanyo Personal Computer Users

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- The small disk symbols appearing beside features and regular columns indicate that the program listings with those articles are on this month's **SOFT SECTOR ON DISK**, ready to LOAD and RUN. For full details, see the **SOFT SECTOR ON DISK** ad on Page 6.



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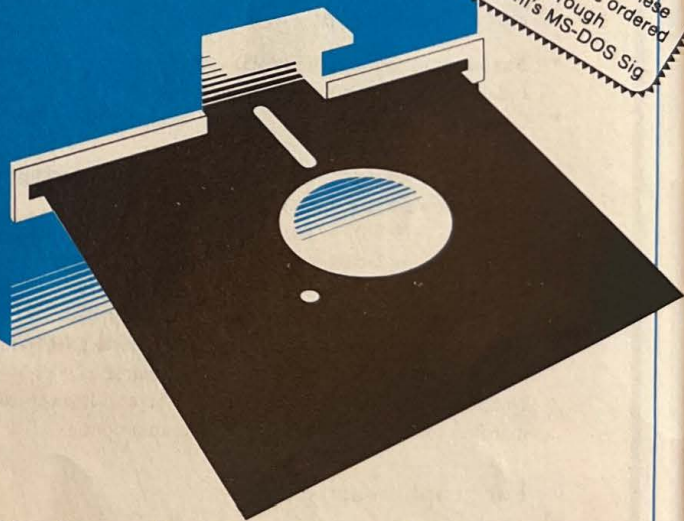
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SOFT SOAPBOX

Games! That's our theme this month. And as you thumb through this issue, you'll find games and more games. You'll find games that require strategy and games that require skill. The main thing you'll find, however, is that they are all fun. Thanks to excellent programming, all the listings are short and easy to type in. As a result, the shorter listings allowed us to run more programs than you usually find in **SOFT SECTOR**.

Not only are there a lot of programs in this issue, but also an abundance of art work. Kudos to Sandy Underwood, **SOFT SECTOR**'s art director. Most of you do not realize the time and thought that goes into the design of the magazine and the art that accompanies the articles. All of the illustrations this month were done by Sandy and she deserves a big "thanks" from all of us for helping make **SOFT SECTOR** the quality publication that it is.

We constantly receive letters from readers offering suggestions on ways to improve **SOFT SECTOR**, and the majority of them are good ones. Often, when the suggestion is simple, we try to honor the request and this month you'll find some of those suggestions implemented. For example, you'll find system requirements listed on the first page of each article. Also, notice that the one-liners are listed in the table of contents.

While we're on the subject of one-liners, we would like to remind you to keep sending them in. Since "The First Great Soft Sector One-Liner Contest" was announced, the response has been overwhelming. We have had some fascinating one-liners and everyone who has typed in and run the ones we've published will have to admit that it's amazing what can be done with a single line of code. So keep those one-liners coming. If your one-liner is published, you'll receive a free **SOFT SECTOR ON DISK** for the month that it runs in the magazine.

Last month in "Soft Soapbox" we mentioned that the **MBC-775** was gaining national recognition and that its switchable clock speed was one of the features bringing it popularity. However, we omitted an important bit of information: It is the **MBC-775e** that has switchable clock speed and not the original 775. We apologize for any confusion that may have caused.

Finally, we appreciate all the hints and suggestions that are sent our way and regret that we cannot incorporate each and every one into **SOFT SECTOR**. In the "Letters To The Editor" column this month, under the subheading "Keeping Count," you'll find a good indication of the support that the readers of **SOFT SECTOR** offer. Thanks to all who took the time to send a response to Philip Levin's question on how to get a word count of his documents. This willingness to offer helpful advice is what makes **SOFT SECTOR** a worthwhile forum for the Sanyo community.

— Belinda Kirby

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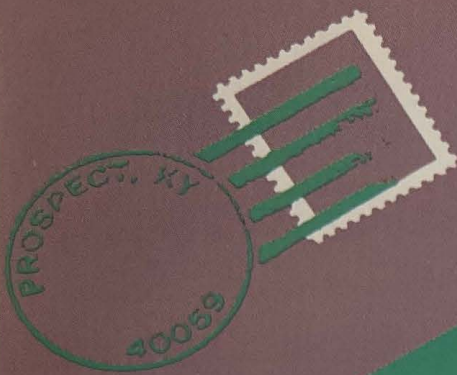
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LETTERS TO THE EDITOR

A HINT OF RAM

Editor:

As one who does a lot of writing of short things (usually under 10 pages) I was interested in your answer to Paul Taylor about using *WordStar* overlays and data with a RAM disk. I do it regularly with no problems.

The trick (if there is one) is to save to floppy frequently, usually after a page or two of writing. It's a bit of a pain to set up, but then what isn't? And once it's installed, it works well.

I use three files to get it up and running; four, counting the RAM disk program which I'll call RAM.SYS. It creates internal Drive E.

On a newly formatted system disk, right after COMMAND.COM, put the file CONFIG.SYS. (I type COPY CON: A:CONFIG.SYS and then what follows. Using COPY CON means each of these files has ^Z as the last line. Also, hit RETURN after each line.)

```
DEVICE=RAM.SYS
FILES=10
BUFFERS=10
BREAK=OFF
SHELL=A:COMMAND.COM A: ^P
```

Some people prefer BREAK=ON, but I have interrupted *WordStar* too many times by hitting ^C by mistake. Also, I am not exactly sure what all these things do, or even whether they are all necessary. I copied them from various newsletters, magazines, etc. I suspect the FILES and BUFFERS may be eliminated.

The next file is AUTOEXEC.BAT:

```
DATE
TIME
ECHO OFF
CLS
VERIFY ON
PATH A:\;B:\;E:\
COPY A:W.BAT E:
E:
W
```

The last file is W.BAT:

```
ECHO OFF
CLS
COPY A:WS*.OVR E:
CLS
E:
A:WS
```

Then put WS.COM, WSMMSG5.OVR and WSOVRLY1.OVR on the same disk, and you're ready to run. (Note: *WordStar* must be reinstalled to look for the .OVR files on Drive E, and I assume that the directions in the manual can take the inquirer through the necessary steps.)

The second part, to make writing to floppy easy, also involves reinstalling *WordStar* and changing the control codes for two of the function keys (or use whatever function keys you do not now use). Change PF7 to ^QR, ^KB, ^QC. This takes the cursor to the beginning of the file, places a marker there, and moves the cursor to the end of the file. Also change PF8 to ^KK, ^KW which places a marker at the end of the file and asks where the marked section is to be written. Tell it, then hit ^KH to remove the markers from the text.

Now *WordStar*, with data files on a RAM disk, is speedy and relatively safe. By saving every page or two, loss is minimal in the event of a power failure.

Glenn Cooper
Point Edward, Ontario

NO BACKUP

Editor:

A while back, a reader wrote in complaining about the .BAK files *WordStar* makes. Recently, I came across a partial solution to this problem. From the 'A' prompt, with *WordStar* in Drive A and a data disk in Drive B, type WS B:TEST.DOC A:. This will put TEST.DOC on Drive A and TEST.BAK on Drive B.

Another solution is to enter B:TEST.DOC A: at the "Name of file to edit?" prompt. Of course the A and B can be reversed to suit your needs.

David Smith
San Anselmo, CA

Editor:

I am constantly amazed by computers. It seems that neither the people who design and build them nor the people who write software for them know everything they can do. Learning about them is a bit like discovering unexplored territory — subtle little devils.

I am writing specifically to reply to Schrider Adibhatla, who wrote to "Business Sector" asking if there was a way to turn off the .BAK function in *WordStar*. You may not be able to turn it off, but there is a way around it. You can use the ^KS (save and resume) function. This saves the file, but does not create a backup. You then have to reboot to get out of *WordStar*, but it sure saves on the anxiety.

Keep up the good work, folks. SOFT SECTOR ON DISK is sure a great idea.

Ronald Brown
Baton Rouge, LA

PAR
AVION

YES, THEY WILL!

Editor:

In the July issue of *SOFT SECTOR*, you printed Questions in "Ask Sanyo" and a software review about IBM software compatibility with the Sanyo and mentioned that *Managing Your Money*, *Lotus 1-2-3* Version 2 and *Turbo Lightning* won't run on a Sanyo 555 even with the video board.

I would like you to know that these programs run on the Sanyo with the video board installed. *Lotus 1-2-3* Version 2 and *MYM* need a patch to remove copy protection which is available on many local bulletin boards. *Turbo Lightning* also runs on a Sanyo (with video board) with the exception of the real-time spelling checker.

I find this acceptable because the real-time spelling checker of *Turbo Lightning* is very annoying and I usually turn off this feature.

S. Nomura
Arlington, TX

MEMORY WITHOUT MONEY

Editor:

Regarding the query by one of the readers of *SOFT SECTOR* in the March 1986 issue as to getting a "Not Enough Memory Error" when trying to run *CalcStar* on an IBM machine with 640K of memory. Any of the Micropro programs that were bundled with the various configurations of the Sanyo MBC-555 computers were all written to run in a maximum 512K environment as stated in the "Business Sector" column.

All of these programs will run on any IBM or clone with memory configurations greater than 512K very easily without spending the money to buy an IBM-specific version of the program. The loader for the Sanyo-supplied Micropro programs such as *CalcStar*, *FormSort*, most of the *Install* programs and even the "File Maintenance" function in *DataStar* checks for an end of memory pointer rather than total installed memory.

If you are running on a machine that has 640K installed memory, you have to install a memory-resident program that protects at least 128K of memory prior to using the Micropro programs.

This procedure "fools" the Micropro program into thinking it is in a 512K or less memory environment. The easiest way to do this is to set up a RAM disk of 128K or greater. In the case of an IBM machine or clone, this has to be done in a *CONFIG.SYS* file which will be executed when you "boot" the system. See the following example to set up a 128K RAM disk at the DOS prompt.

```
COPY CON CONFIG.SYS
DEVICE=RAMDISK.SYS 128
^Z
```

The file *RAMDISK.SYS* or whatever your RAM disk filename happens to be (some are called *VDISK.SYS*), must be on your "boot" disk in order to work.

Don't forget this RAM disk can be used just like another disk drive to store other

programs or data files for superfast access. Another alternative is to load any combination of other memory resident programs that will protect at least 128K of memory. *SuperKey* and *SideKick* together work just fine.

Norbert L. Green
Rock Island, IL

KEEPING COUNT

Editor:

In response to Philip M. Levin's query in "Business Sector," May 1986: *SpellStar* will provide a word count on a *WordStar* file rather quickly if you *do not* insert the disk with your dictionary.

From the *WordStar* main menu invoke *SpellStar*, supply the document name and hit RETURN in answer to all queries. It counts the words and then gives you an error message saying it can't find the dictionary. Hit RETURN to go back to *WordStar*. (It's for this reason that I still keep my dictionary on a separate disk even though I've upgraded to 800K drives.)

Sally Mitchell
Philadelphia, PA

Editor:

In response to the letter from Philip M. Levin to "Business Sector" (May '86, Page 60) regarding a word counting program: I have a suggestion that might help. Although *WordStar* does not have a word counting utility, *EasyWriter* does: CONTROL-I will return the total number of words in the text. What Mr. Levin may not realize, however, is that *EasyWriter* will count the words of a *WordStar* text, even if the file is not stripped and is indecipherable. Loading a *WordStar* text file into *EasyWriter* is much faster than estimating word totals, and yields an exact number.

To clarify a point I made in "How to Make *EasyWriter* Even Easier" (May '86, Page 54), all the .PRT files may be deleted to free up disk space *except*, of course, the one that is right for your printer.

To run *EasyWriter*, you need only four files: *EWPRGM.COM*, *EWPRGM.MSG*, *THE RIGHT.PRT* and *CONFIG.OPT*. These four files, copied to your working disk, take up only one-fourth of the space of the original files on the system disk.

And if your DOS version does not support the pause CONTROL-S function for reading a text file in DOS, *EasyWriter* can be used for *WordStar* files that have been stripped. See *SOFT SECTOR* articles from June '85 (Page 72) and August '85 (Page 10) for BASIC strippers. (The former works faster and permits a new filename, and is only a One Liner!)

Bruce A. White
Mt. Rainier, MD

Editor:

I noticed in the May issue of *SOFT SECTOR* in the "Business Sector" portion, Mr. Philip M. Levin stated that he had an MBC-555-2 with both *WordStar* and *EasyWriter*, and he wanted to have the capability of keeping a running count of the words in a text file.

I use my Sanyo MBC-555-2 for a similar purpose and I use the *EasyWriter* program. I find that it is an excellent program, which is easy to learn and very capable. It will not provide a running word count, but at any point, if he will press CONTROL-I he will receive a current word count.

This *EasyWriter* program will do everything I require, and do it very simply and quite well. The *WordStar* program must be a good one, but I have found it to be much too complex, so much so that it draws my attention from what I am trying to write. The *SpellStar* that is meant to be used with it is very difficult to use.

G. Malcolm Donahoo
Golden, CO

Editor:

Mr. Philip M. Levin's problem of counting words, ("Business Sector," May '86) has probably been solved many times over by now. Again, I may not completely understand his problem but, for what it may help, let me throw this in: The first thing *SpellStar* does when run is issue a visible word count of the document or text. This may not be that for which Mr. Levin is looking, as this would probably be termed a total count, not a running count.

There is another program I just ran across called *The Writers Aid Package* which consists of seven utilities as follows:

WRD COUNT — Counts word, lines, average character per word, etc.

#'s LINES — Infinite numbered line formats possible.

COMBINES — Combines and links the three files WS makes (each file Edit) into one.

MATCHUP — You forgot to turn "underline" off — Matchup takes care of it.

WS/ASCII — Edits ordinarily uneditable files.

CRYPT — Turns Doc or file into unreadable mishmash, restored by secret password.

WORD FREQUENCY — Number of times a word appears in Document, by frequency or alphabetical order.

This program frequency is available from Spite Software, 4875 S.W. 19th Drive, Portland, OR 97201; (800) 824-7919 or (800) 824-7888 — operator 311, \$39.95.

Thanks for a great magazine. It's the answer to my prayers!

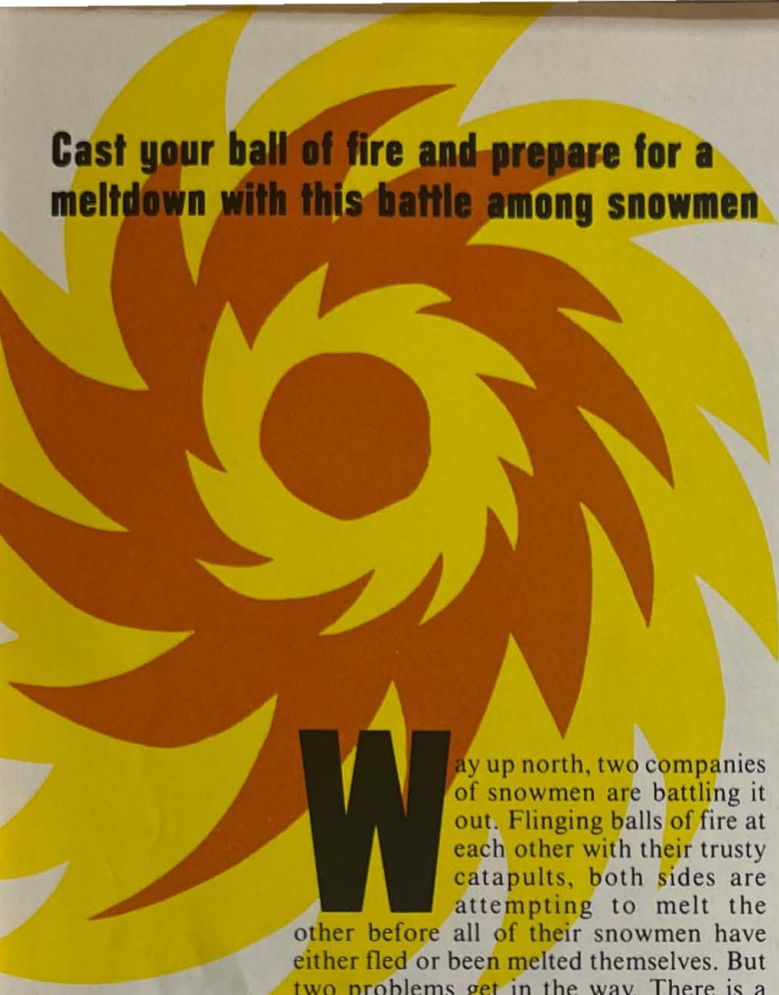
Len Witbeck
Santa Cruz, CA

Editor:

You might want to pass this bit of information to Philip Levin of Wilmington, Del., who asked about counting words in the May '86 issue of *SOFT SECTOR*. You might point out to him that one of the features of *SpellStar* is that it counts the total words in a *WordStar* file.

I hope this helps anyone with the same question.

Julian F. Randolph
Albany, CA



Cast your ball of fire and prepare for a meltdown with this battle among snowmen

Catapult

Sanyo BASIC
and GW-BASIC

By David C. Snyder

Way up north, two companies of snowmen are battling it out. Flinging balls of fire at each other with their trusty catapults, both sides are attempting to melt the other before all of their snowmen have either fled or been melted themselves. But two problems get in the way. There is a mountain in between the two catapult sites, and the wind speed keeps changing, making it hard to gauge how far the balls of fire will travel. It takes a shrewd catapulteer indeed to overcome these obstacles!

Catapult simulates the battle described in the above paragraph. Both sides have a launch site with uneven terrain (usually a tall mountain) between them.

The object is to "melt" the other side by scoring a direct hit on its launch site with your balls of fire. Both players in turn enter firing angle and speed as two numbers separated by a comma (e.g., 70,100 for a firing angle of 70 and a launch speed of 100 mph). You will be told the wind speed and an arrow will indicate direction. If you request it, wind speed will vary with each shot.

Both companies start with 100 snowmen. After each shot, there is a deserter on each side. Misses cause no casualties unless they are near misses, in which case casualties are determined by distance and number of snowmen remaining.

A near miss which would bring a company to less than 10 snowmen is treated

as a direct hit. A direct hit causes a "meltdown" and ends the game. If desertion brings your company to less than five snowmen, your catapult misfires. Running totals of company strength are kept for each side.

Since misses leave craters, shots can be used to lower a large mountain.

The Program

Enter Listing 1 in the normal fashion. It is written in Sanyo BASIC, but for those of you using GW-BASIC, the following modified lines will allow you to run it as well, although you may want to change some of the colors in other lines. Eliminate lines 1980 and 2060.

```
80 CLS:LOCATE 10,30,0:PRINT
  "MVP CATAPULT"
90 PRINT TAB(27) "By David
  C. Snyder"
1360 INPUT E$,V$:LOCATE , ,0
```

Whether you use Sanyo or GW-BASIC, if you have a color monitor you may wish to experiment with different colors. CAT.BAS presently uses only colors 2 and 3 (green and light blue) so it can run on a monochrome monitor.

In Sanyo BASIC, those with color monitors may particularly want to change the last number in lines 920, 930 and 950 to 1 or 6, and the last number in Line 970 to 2. Further experimentation could produce some interesting effects.

The program uses many of the graphics statements available to Sanyo BASIC programmers. Comments in the program listing explain what each section of the program accomplishes, so you can figure out what each graphics statement does. The main game loop is in lines 1000 through 1950. Lines 80 through 990 initialize the program, while lines 1960 through 2170 determine and display the results of the game.

David Snyder holds a Ph.D. and is currently a professor of philosophy at Calvin College in Grand Rapids, Mich. Since 1983, he has used a Sanyo 555 for research and programming, and he is co-owner of MVP Software. He may be contacted at MVP Software, 1035 Dallas S.E., Grand Rapids, MI 49507; (616) 245-8376.

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The listing: CAT.BAS

```

10 *****
20 '*
30 '* MVP CATAPULT *
40 '* By Dr. David C. Snyder *
50 '* Copyright (C) 1986 MVP Software *
60 '*
70 *****
80 CLS:LOCATE 1,1,0:SYMBOL(80,50),"MVP C
ATAPULT",5,4,3
90 SYMBOL(173,90),"By David C. Snyder",2
,1
100 DIM H(320)
110 ON ERROR GOTO 2170
120 TIM$=RIGHT$(TIME$,2)
130 RIM=ASC(RIGHT$(TIM$,1))
140 RIM=RIM+ASC(LEFT$(TIM$,1))
150 RANDOMIZE(RIM)
160 DEG=.017745329#
170 LOCATE 16,12,1:PRINT "Do you want va
rying wind? (Y/N) ";
180 Q$=INKEY$:IF Q$="" THEN 180
190 Q1=0
200 IF Q$<"Y" AND Q$<"y" THEN PRINT"No
":GOTO 240
210 Q1=1:PRINT"Yes"
220 PRINT:PRINT TAB(5) "Level of difficu

```

```

lty:";;INPUT" 1 (EASY) TO 20 (DIFFICU
LT) ",LEVEL
230 IF LEVEL <1 OR LEVEL>20 THEN BEEP:GO
TO 220
240 N=1.5+1^INT(100*RND(1))*5
250 CLS:LOCATE 1,1,0:PRINT>Please stand
by . . . ."
260 T1(1)=0:T1(2)=0:M1(1)=101:M1(2)=101
270 FOR L=1 TO 4
280 READ B1(L):NEXT
290 FOR L=1 TO 4
300 READ B2(L):NEXT
310 DATA -1,1,1,-1,-1,-1,1,1
320 E1(1)=0:E1(2)=0:V1(1)=0:V1(2)=0
330 N2=0:E3=0
340 '*** ESTABLISH BASE LOCATIONS ***
350 X1=INT(53+RND(1)*60)
360 X2=INT(198+RND(1)*60)
370 L(1)=INT(20+(X1-20)*RND(1))
380 L(2)=INT(X2+(300-X2)*RND(1))
390 '*** ESTABLISH LEFT & RIGHT ELEVATIO
NS ***
400 HGT1=RND(1)*98+2
410 HGT2=RND(1)*98+2
420 IF HGT1>HGT2 THEN 450
430 HGT1=15:HGT2=15
440 GOTO 510
450 IF HGT1>HGT2 THEN 490
460 HGT2=15+(HGT2-HGT1)
470 HGT1=15
480 GOTO 510

```

FastScreen

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```

490 HGT1=15+(HGT1-HGT2)
500 HGT2=15
510 FOR I=1 TO X1
520 H(I)=HGT1:NEXT
530 H9=RND(1)*98+2
540 FOR I=X2 TO 320
550 H(I)=HGT2:NEXT
560 '*** PEAK ELEVATION ***
570 X3=X1+INT(RND(1)*(X2-X1-20))+10
580 H(X3)=RND(1)*90+50
590 '*** SLOPE OF FLAT LAND TO PEAK ***
600 D1=(H(X3)-H(1))/2
610 D2=(H(X3)-H(320))/2
620 IF D1*D2<0 THEN 820
630 '*** CURVE TO PEAK ***
640 J=-180
650 K=180/(X3-X1+1)
660 H9=H(1)+D1
670 FOR I=X1+1 TO X3-1
680 J=J+K
690 H(I)=H9+COS(J*DEG)*D1
700 NEXT I
710 J=0
720 K=180/(X2-X3+1)
730 H9=H(320)+D2
740 '*** CURVE FROM PEAK ***
750 FOR I=X3+1 TO X2-1
760 J=J+K
770 IF I=321 THEN 800
780 H(I)=H9+COS(J*DEG)*D2
790 NEXT I

```

```

800 GOTO 910
810 '*** CURVE FROM LEFT TO RIGHT ***
820 D=(H(1)-H(320))/2
830 J=0
840 K=180/(X2-X1+1)
850 H9=H(320)+D
860 FOR I=X1+1 TO X2-1
870 J=J+K
880 H(I)=H9+COS(J*DEG)*D
890 NEXT I
900 '*** DRAW TERRAIN ***
910 CLS
920 LINE (X2,(200-H(X2)))-(800,(200-H(X2))),3
930 LINE (0,(200-H(1)))-(X1,(200-H(X1))),3
940 FOR I=X1 TO X2
950 LINE -(I,(200-H(I))),3
960 NEXT I
970 PAINT (100,199),1,3
980 '*** DETERMINE WIND ***
990 WIND=100*RND(1)-50
1000 W=((LEVEL*2)*RND(1))-LEVEL+WIND
1010 W=INT(W)
1020 IF W<1 THEN ARROW=27 ELSE ARROW=26
1030 IF W=0 THEN 990
1040 N=3-N
1050 M1(N)=M1(N)-1
1060 M1(3-N)=M1(3-N)-1
1070 '*** DRAW BASES ***
1080 IF XX<0 THEN 1110

```

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```

1090 XX=L(1)
1100 YY=200-H(L(1))
1110 LINE (XX-4,YY-4)-(XX+4,YY+4),,BF:IF
XXX<0 THEN 1140
1120 XXX=L(2)
1130 YYY=200-H(L(2))
1140 LINE (XXX-4,YYY-4)-(XXX+4,YYY+4),,B
F
1150 '*** PRINT TITLES ***
1160 FOR I=4 TO 6:LOCATE I,1:PRINT STRIN
G$(70,32):NEXT:FLAG=FLAG+1
1170 LOCATE 1,2
1180 PRINT "ANGLE    SPEED    SNOWMEN"
1190 LOCATE 1,50
1200 PRINT "ANGLE    SPEED    SNOWMEN"
1210 PRINT STRING$(73,205)
1220 LOCATE 3,20:PRINT USING "####";M1(1)
1230 LOCATE 3,68:PRINT USING "####";M1(2)
1240 LOCATE 1,36
1250 PRINT "Wind"
1260 LOCATE 3,33:PRINT"-";:IF ABS(W)=>10
THEN PRINT " ";
1270 PRINT USING "###";ABS(W);:PRINT " mp
h -";
1280 FOR I=5 TO 50 STEP 45:LOCATE 4,I
1290 PRINT STRING$(20,32):NEXT
1300 LOCATE 4,38
1310 PRINT CHR$(ARROW)
1320 IF FLAG/2=INT(FLAG/2) THEN LOCATE 3
,3 ELSE LOCATE 3,51
1330 PRINT USING "####";E1(N);
1340 PRINT STRING$(5,32);:PRINT USING "#
##";V1(N)
1350 IF FLAG/2=INT(FLAG/2) THEN LOCATE 4
,3,1 ELSE LOCATE 4,51,1
1360 INPUT E$,V$:LOCATE GSRLIN,POS,0
1370 E=VAL(E$):V=VAL(V$)
1380 IF V>250 THEN 1280
1390 E1(N)=E:V1(N)=V
1400 V=V/10
1410 IF M1(N)>5 THEN 1450
1420 E=90
1430 V=0
1440 W=1
1450 E=90-E
1460 IF N=1 THEN 1490
1470 E=-E
1480 E3=-E3
1490 X1=L(N)
1500 Y1=H(L(N))
1510 T=0
1520 V1=SIN(E*DEG)*V
1530 V2=COS(E*DEG)*V
1540 T=T+.3
1550 IF T=.3 THEN 1570
1560 PRESET (X,200-Y)
1570 V1=V1+(V1+W)/1500
1580 X=X1+(V1+W/50)*T
1590 IF X<1 OR X>320 THEN 1950
1600 '*** ACCOUNT FOR GRAVITY AND ACCELE
RATION ***
1610 Y=Y1+(V2-T/2.5)*T
1620 PSET (X,200-Y),3
1630 IF Y-H(X)=>1 THEN 1540

```

```

1640 PRESET (X,200-Y)
1650 IF ABS(X-L(N))<1 AND T>.5 THEN 1980
1660 IF ABS (X-L(3-N))<1 THEN 1970
1670 IF T<.5 THEN 1540
1680 '*** MISS ***
1690 IF X<6 THEN 1860
1700 IF X>314 THEN 1860
1710 LINE (X-3,(200-H(X-3)))-(X-2,(200-H
(X-2))),0
1720 FOR L=X-2 TO X+3
1730 LINE -(L,(200-H(L))),0
1740 NEXT L
1750 TMY=195-Y
1760 IF TMY>186 THEN 1860
1770 '*** CHANGE LANDSCAPE ***
1780 FOR I=1 TO 10:IF X>0 OR TMY>0 THEN
CIRCLE(X,TMY),I,,,0:NEXT
1790 H(X-3)=H(X-3)-3
1800 H(X-2)=H(X-2)-4
1810 H(X-1)=H(X-1)-5
1820 H(X)=H(X)-6
1830 H(X+1)=H(X+1)-5
1840 H(X+2)=H(X+2)-4
1850 H(X+3)=H(X+3)-3
1860 IF ABS(X-L(3-N))>8 THEN 1950
1870 '*** NEAR MISS ***
1880 D9=2*ABS(X-L(3-N))
1890 D9=INT(M1(3-N)/D9)
1900 M1(3-N)=M1(3-N)-D9
1910 T1(3-N)=T1(3-N)+D9
1920 N2=1
1930 IF M1(3-N)<10 THEN 1970
1940 N2=0
1950 IF Q1=1 THEN 1000 ELSE 1040
1960 '*** HIT AND EXPLOSION ***
1970 N=3-N
1980 SYMBOL(X-10,188-Y),CHR$(15),3,2,7
1990 FOR I=1 TO 30:CIRCLE(X,195-Y),I,,,
3,0:NEXT
2000 FOR I=1 TO 30:IF X-I<1 THEN 2050
2010 PSET(X-I,200-Y-I):PSET(X+I,200-Y-I)
:PSET(X,200-Y-I)
2020 PSET(X-I+7,200-Y-I):PSET(X+I+7,200-
Y-I)
2030 PRESET(X-I,200-Y-I):PRESET(X+I,200-
Y-I):PRESET(X-I,200-Y):PRESET(X,200-Y-I)
:PRESET(X+I,200-Y)
2040 PRESET(X-I+7,200-Y-I):PRESET(X+I+7,
200-Y-I)
2050 NEXT
2060 SYMBOL(X-8,195-Y),"+",3,2
2070 LOCATE 6,1,1
2080 T1(N)=T1(N)+M1(N)
2090 PRINT " CASUALTIES:  left ="T1(1)"
right ="T1(2)"
2100 IF N2=1 THEN 2120
2110 N=3-N
2120 PRINT " PLAY AGAIN? (Y/N) ";
2130 A$=INKEY$:IF A$="" THEN 2130
2140 IF A$="N" OR A$="n" THEN PRINT"No":
GOTO 2160 ELSE PRINT"Yes"
2150 CLS:RUN 100
2160 END
2170 RESUME NEXT

```


Now you can go hunting all year 'round
without a permit when you play . . .

Duck Season

Requires 256K

By Kevin Pike

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on the Sanyo! Time to get out the
ol' rifle and shoot down a few birdies!

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favorite bird at any time during the year
without a permit!

After you've typed the program in and
saved it, run *Duck Season*. You'll see the
opening scene with a duck flying across
the screen. On his second time around,

*Kevin Pike is 13 years old and is currently
an eighth grader at the Mansfield Middle
School in Storrs, Conn. Besides computing,
Kevin also enjoys music.*



you'll notice that a hunter has come out and BOOM! there's one dead duck!

Once this little introduction is through, you'll be asked if you want to shoot at quacking ducks or mute ducks (sound or no sound). The next selection you must make pertains to the skill level you want. When you're asked "Do you want to shoot at 'quacked' ducks? (Y/N)" I suggest that you depress 'N' on your first time through.

This is the normal routine. Once you master this screen, type 'Y' at the prompt. This version is a little more challenging because the ducks you shoot at act like they had one drink too many.

When you're playing the game, notice that you are the triangle at the bottom. To shoot at the ducks, depress the space bar. The bullet you shoot will move 10 pixels up each time the duck moves. When you

hit a duck, the duck falls from the sky and another one will come flying overhead.

The duck season ends after a certain amount of time. When it does, you'll get to see your earnings. You may then choose to play again or quit. (Note: This game will not work on machines with less than 256K because of the use of large arrays for the GET and PUT commands.)

Good Luck!

The listing: DUCKS.BAS

```

10 ' =====
20 ' [
30 ' [          DUCK SEASON          ]
40 ' [    Program By Kevin Pike    ]
50 ' [          1986                ]
60 ' [                               ]
70 ' =====
80 DIM D1(110),D2(110),D3(110),B(30),DD(110)
90 COLOR 2,0:CLS:LOCATE 1,1,0
100 SYMBOL(230,0),"Kevin Pike Presents:",1,1,7
110 FOR X=-1 TO 1 STEP 2:SYMBOL(250+X,10),"DUCK",4,3,4:SYMBOL(250,10+X),"DUCK",4
,3,4:SYMBOL(220+X,35),"SEASON",4,3,4:SYMBOL(220,35+X),"SEASON",4,3,4:NEXT X
120 SYMBOL(250,10),"DUCK",4,3,6:SYMBOL(220,35),"SEASON",4,3,2
130 GOSUB 900
140 FOR X=0 TO 1:LINE(14+X,78)-(17+X,69),1:LINE(26+X,78)-(23+X,69),1
150 LINE(17+X,69)-(20+X,65),1:LINE(23+X,69)-(20+X,65),1:NEXT X
160 LINE(15,78)-(26,78),1:PAINT(20,69),6,1:LINE(15,78)-(26,78),6
170 GOSUB 910
180 GET(6,64)-(49,86),D1:LINE(6,64)-(49,86),0,BF
190 GOSUB 900
200 FOR X=0 TO 1:LINE(13+X,78)-(16+X,66),1:LINE(28+X,78)-(24+X,66),1
210 LINE(16+X,66)-(20+X,74),1:LINE(24+X,66)-(20+X,74),1:NEXT X
220 LINE(18,66)-(23,66),1:PAINT(20,67),6,1:LINE(18,66)-(23,66),6:LINE(14,78)-(27
,78),1:PAINT(17,74),6,1:PAINT(24,74),6,1:LINE(15,78)-(26,78),6
230 GOSUB 910
240 GET(6,65)-(49,86),D2:LINE(6,65)-(49,86),0,BF
250 GOSUB 900
260 FOR X=0 TO 1:LINE(14+X,78)-(21+X,90),1:LINE(28+X,78)-(22+X,90),1:NEXT X
270 PAINT(21,86),6,1:GOSUB 910
280 GET(6,74)-(49,91),D3:LINE(6,70)-(49,91),0,BF
290 FOR X=6 TO 640 STEP 12:N=N+1
300 IF N=3 THEN N=0
310 IF N=0 THEN PUT(X,65),D1:PUT(X,65),D1,XOR
320 IF N=1 THEN PUT(X,65),D2:PUT(X,65),D2,XOR
330 IF N=2 THEN PUT(X,65),D3:PUT(X,65),D3,XOR
340 NEXT X
350 LINE(310,199)-(320,190),2:LINE(330,199)-(320,190),2:PAINT(320,199),2
360 CIRCLE(320,175),5,,,5:PAINT(320,175),4,5:GET(314,172)-(326,178),B
370 PUT(314,172),B,XOR
380 D=185:FOR X=0 TO 320 STEP 10:N=N+1
390 IF N=3 THEN N=0 ELSE IF N=1 THEN PUT(X,65),D2 ELSE IF N=2 THEN PUT(X,65),D3
400 IF N=0 THEN PUT(X,65),D1
410 IF X>210 THEN D=D-10:PUT(315,D),B
420 LINE(X,65)-(X+43,87),0,BF:IF X>210 THEN LINE(310,D-5)-(330,D+7),0,BF
430 NEXT X
440 FOR X=1 TO 3:PUT(320,65),D1,PRESET:PUT(320,65),D1:NEXT X
450 LINE(320,65)-(363,87),0,BF

```



```

460 CIRCLE(335,70),6,,,1,6:PAINT(335,70),6
470 CIRCLE(335,78),4,,,6:PAINT(335,78),6:LINE(332,81)-(335,86),4:LINE(338,81)-(
335,86),4:LINE(338,81)-(332,81),4:PAINT(335,83),4
480 FOR X=0 TO 1:LINE(331+1,72)-(334+1,60),1:LINE(337+X,72)-(335-X,60),1:NEXT
490 PSET(335,77),0:PSET(335,78),0:PSET(334,77),0:PSET(336,77),0
500 GET(327,59)-(343,87),DD:LINE(327,59)-(343,87),0,BF
510 FOR Y=87 TO 157 STEP 10:PUT(327,Y),DD:PUT(327,Y),DD,XOR:NEXT Y
520 LOCATE 12,22:PRINT "Do you want quacking ducks? (Y/N)":QU$=INPUT$(1)
530 LOCATE 12,22:PRINT "
540 LOCATE 13,16:PRINT "Do you want to shoot at 'quacked' ducks? (Y/N)":SK$=INPU
T$(1)
550 IF T2=1 THEN GOTO 880
560 CLS
570 LINE(310,199)-(320,190),2:LINE(330,199)-(320,190),2:PAINT(320,198),2
580 S=0:A=10:D=175:N=0:CS=0
590 FOR X=1 TO 400
600 I$=INKEY$
610 IF SK$="Y" OR SK$="y" THEN AD=INT(RND*5)*10+-10 ELSE AD=10
620 IF A+AD<0 THEN AD=10
630 A=A+AD
640 IF A=330 THEN A=340
650 N=N+1:IF N=3 THEN N=0
660 IF S=1 THEN D=D-10
670 IF N=0 THEN PUT(A,20),D1:IF QU$="Y" OR QU$="y" THEN FOR H=1 TO 15:OUT 56,0:N
EXT
680 IF N=1 THEN PUT(A,20),D2
690 IF N=2 THEN PUT(A,20),D3:IF QU$="Y" OR QU$="y" THEN FOR H=1 TO 7:OUT 56,24:N
EXT
700 IF I$=" " THEN IF S=0 THEN S=1
710 IF D=15 THEN S=0:D=175
720 IF S=1 THEN PUT(315,D),B
730 FOR H=280 TO 320 STEP 10
740 IF A=H AND D=35 THEN GOSUB 930
750 NEXT H
760 LOCATE 24,1:PRINT "SCORE = ";CS
770 LINE(A,20)-(A+43,43),0,BF:IF S=1 THEN LINE(310,D-5)-(330,D+7),0,BF
780 IF A>549 THEN A=0
790 NEXT X
800 CLS:LOCATE 2,23:PRINT "The Duck Season is officially":FOR X=-1 TO 1:SYMBOL(2
00+X,20),"OVER",6,3,5:SYMBOL(200,20+X),"OVER",6,3,5:NEXT X
810 SYMBOL(200,20),"OVER",6,3,6
820 LOCATE 7,27:PRINT "Here is what you shot."
830 A=0:D=100:FOR X=1 TO CS/10
840 A=A+20:IF A=620 THEN A=20:D=D+30
850 PUT(A,D),DD:NEXT X
860 LOCATE 24,20:PRINT "Press <P> To Play Again Or <Q> To Quit":I$=INPUT$(1):IF
I$="Q" OR I$="q" THEN END ELSE IF I$="P" OR I$="p" THEN 870 ELSE GOTO 860
870 CLS:T2=1:GOTO 520
880 RESTORE 870:CLS:FOR X=1 TO 6:READ A$:SYMBOL(320+-(LEN(A$)*10),X*25),A$,2,3,X
:NEXT X:DATA THE,DUCK,SEASON,IS,NOW,OPEN
890 FOR X=1 TO 500:NEXT:GOTO 560
900 CIRCLE(20,80),12,,,4,6:PAINT(20,80),6:RETURN
910 CIRCLE(36,80),7,,,51,6:PAINT(36,80),6:CIRCLE(37,79),2,,,0:PAINT(37,79),0
920 LINE(42,79)-(48,80),4:LINE(42,81)-(48,80),4:LINE(42,81)-(42,79),4:PAINT(44,8
0),4:RETURN
930 LINE(A,20)-(A+43,43),0,BF:LINE(315,D)-(330,D+10),0,BF
940 FOR Y=1 TO 3:PUT(A,20),D1,PRESET:PUT(A,20),D1:NEXT Y
950 LINE(A,20)-(A+43,43),0,BF
960 FOR Y=20 TO 150 STEP 10:PUT(A+10,Y),DD:PUT(A+10,Y),DD,XOR:NEXT Y
970 CS=CS+10
980 A=0:S=0:D=175:N=0:RETURN

```


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The guidelines for the SOFT SECTOR One-Liner Contest are as follows:

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The SOFT SECTOR One-Liner Contest
P.O. Box 385
Prospect, KY 40059

Winners of the one-liner contest will receive a copy of SOFT SECTOR ON DISK for the month in which their entry is published.

One Liner

THE MINIMUM MAILER

The first program creates a delimited file called LIST, which you can name anything you want. It either creates a new file, or appends new names to an existing file. Call it B:LIST and the file is saved on the disk in Drive B.

```
1 CLS:LINE INPUT "Name.: ",A$:LINE INPUT
  "Addr.: ",B$:INPUT "CITY.: ",C$:INPUT "
STATE: ",D$:INPUT "ZIP.: ",E$:OPEN "A",
#1,"LIST":WRITE#1,A$,B$,C$,D$,E$:CLOSE#1
:GOTO 1
```

The second program reads the delimited file and outputs mailing labels. The three trailing LPRINT commands fill in the blanks on typical one-inch deep, pressure-sensitive labels. If yours are different, you'll have to add or subtract LPRINT commands.

```
1 CLS:OPEN"I",#1,"LIST":WHILE NOT(EOF(1))
):INPUT#1,A$,B$,C$,D$,E$:LPRINT A$:LPRINT
B$:LPRINT C$," ";D$;" ";E$:LPRINT:LPRINT
LPRINT:WEND:CLOSE#1
```

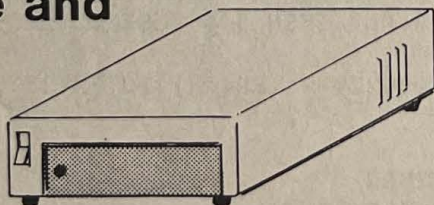
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Raleigh, NC

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```

460 CIRCLE(335,70),6,,,1,6:PAINT(335,70),6
470 CIRCLE(335,78),4,,,6:PAINT(335,78),6:LINE(332,81)-(335,86),4:LINE(338,81)-(
335,86),4:LINE(338,81)-(332,81),4:PAINT(335,83),4
480 FOR X=0 TO 1:LINE(331+1,72)-(334+1,60),1:LINE(337+X,72)-(335-X,60),1:NEXT
490 PSET(335,77),0:PSET(335,78),0:PSET(334,77),0:PSET(336,77),0
500 GET(327,59)-(343,87),DD:LINE(327,59)-(343,87),0,BF
510 FOR Y=87 TO 157 STEP 10:PUT(327,Y),DD:PUT(327,Y),DD,XOR:NEXT Y
520 LOCATE 12,22:PRINT "Do you want quacking ducks? (Y/N)":QU$=INPUT$(1)
530 LOCATE 12,22:PRINT "
540 LOCATE 13,16:PRINT "Do you want to shoot at 'quacked' ducks? (Y/N)":SK$=INPU
T$(1)
550 IF T2=1 THEN GOTO 880
560 CLS
570 LINE(310,199)-(320,190),2:LINE(330,199)-(320,190),2:PAINT(320,198),2
580 S=0:A=10:D=175:N=0:CS=0
590 FOR X=1 TO 400
600 I$=INKEY$
610 IF SK$="Y" OR SK$="y" THEN AD=INT(RND*5)*10+-10 ELSE AD=10
620 IF A+AD<0 THEN AD=10
630 A=A+AD
640 IF A=330 THEN A=340
650 N=N+1:IF N=3 THEN N=0
660 IF S=1 THEN D=D-10
670 IF N=0 THEN PUT(A,20),D1:IF QU$="Y" OR QU$="y" THEN FOR H=1 TO 15:OUT 56,0:N
EXT
680 IF N=1 THEN PUT(A,20),D2
690 IF N=2 THEN PUT(A,20),D3:IF QU$="Y" OR QU$="y" THEN FOR H=1 TO 7:OUT 56,24:N
EXT
700 IF I$=" " THEN IF S=0 THEN S=1
710 IF D=15 THEN S=0:D=175
720 IF S=1 THEN PUT(315,D),B
730 FOR H=280 TO 320 STEP 10
740 IF A=H AND D=35 THEN GOSUB 930
750 NEXT H
760 LOCATE 24,1:PRINT "SCORE = ";CS
770 LINE(A,20)-(A+43,43),0,BF:IF S=1 THEN LINE(310,D-5)-(330,D+7),0,BF
780 IF A>549 THEN A=0
790 NEXT X
800 CLS:LOCATE 2,23:PRINT "The Duck Season is officially":FOR X=-1 TO 1:SYMBOL(2
00+X,20),"OVER",6,3,5:SYMBOL(200,20+X),"OVER",6,3,5:NEXT X
810 SYMBOL(200,20),"OVER",6,3,6
820 LOCATE 7,27:PRINT "Here is what you shot."
830 A=0:D=100:FOR X=1 TO CS/10
840 A=A+20:IF A=620 THEN A=20:D=D+30
850 PUT(A,D),DD:NEXT X
860 LOCATE 24,20:PRINT "Press <P> To Play Again Or <Q> To Quit":I$=INPUT$(1):IF
I$="Q" OR I$="q" THEN END ELSE IF I$="P" OR I$="p" THEN 870 ELSE GOTO 860
870 CLS:T2=1:GOTO 520
880 RESTORE 870:CLS:FOR X=1 TO 6:READ A$:SYMBOL(320+-(LEN(A$)*10),X*25),A$,2,3,X
:NEXT X:DATA THE,DUCK,SEASON,IS,NOW,OPEN
890 FOR X=1 TO 500:NEXT:GOTO 560
900 CIRCLE(20,80),12,,,4,6:PAINT(20,80),6:RETURN
910 CIRCLE(36,80),7,,,51,6:PAINT(36,80),6:CIRCLE(37,79),2,,,0:PAINT(37,79),0
920 LINE(42,79)-(48,80),4:LINE(42,81)-(48,80),4:LINE(42,81)-(42,79),4:PAINT(44,8
0),4:RETURN
930 LINE(A,20)-(A+43,43),0,BF:LINE(315,D)-(330,D+10),0,BF
940 FOR Y=1 TO 3:PUT(A,20),D1,PRESET:PUT(A,20),D1:NEXT Y
950 LINE(A,20)-(A+43,43),0,BF
960 FOR Y=20 TO 150 STEP 10:PUT(A+10,Y),DD:PUT(A+10,Y),DD,XOR:NEXT Y
970 CS=CS+10
980 A=0:S=0:D=175:N=0:RETURN

```


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One Liner

THE MINIMUM MAILER

The first program creates a delimited file called LIST, which you can name anything you want. It either creates a new file, or appends new names to an existing file. Call it B:LIST and the file is saved on the disk in Drive B.

```
1 CLS:LINE INPUT "Name.: ",A$:LINE INPUT
  "Addr.: ",B$:INPUT "CITY.: ",C$:INPUT "
  STATE: ",D$:INPUT "ZIP.: ",E$:OPEN "A",
  #1,"LIST":WRITE#1,A$,B$,C$,D$,E$:CLOSE#1
  :GOTO 1
```

The second program reads the delimited file and outputs mailing labels. The three trailing LPRINT commands fill in the blanks on typical one-inch deep, pressure-sensitive labels. If yours are different, you'll have to add or subtract LPRINT commands.

```
1 CLS:OPEN"I",#1,"LIST":WHILE NOT(EOF(1)
  ):INPUT#1,A$,B$,C$,D$,E$:LPRINT A$:LPRIN
  T B$:LPRINT C$;"",";D$;" ";E$:LPRINT:LP
  RINT:LPRINT:WEND:CLOSE#1
```

George A. Frye
Raleigh, NC

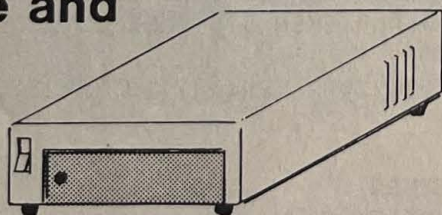
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The following products have recently been received by SOFT SECTOR, examined by our magazine staff and approved for the *Soft Sector Seal of Certification*, your assurance that we have seen the product and have ascertained that it is what it purports to be.

DOC'S PLACE is a card game program that includes four games: Canfield (Solitaire), Blackjack, Draw Poker and Acey-Deucey. When the program is run, you may move from game to game. The Blackjack, Draw Poker and Acey-Deucey games are self-explanatory and the user is prompted for each action. Canfield has instruction screens built in for those not familiar with this version of solitaire.

Doc's Place runs on an MBC-555 under MS-DOS 1.25 or later and is currently available for \$14.95 from Jim Dougherty, 3314 33rd Way, W. Palm Beach, FL 33407; (305) 683-3347.

TURBO TUTOR is a *Turbo PASCAL* tutorial for the novice and expert programmer alike. For the novice, this program gives a concise history of PASCAL, explains how to write a simple program and defines the basic programming terms you need to know. For the experienced programmer, *Turbo Tutor* can help sharpen the fine points and focuses on the whole spectrum of *Turbo PASCAL* programming techniques.

The manual covers program structure, data types, control structures, procedures and functions, scalar types, arrays, strings, pointers, sets, files and records. Sections detailing linked lists, trees and graphs are also included in the manual. You'll also find sample program examples for PC-DOS, MS-DOS and CP/M.

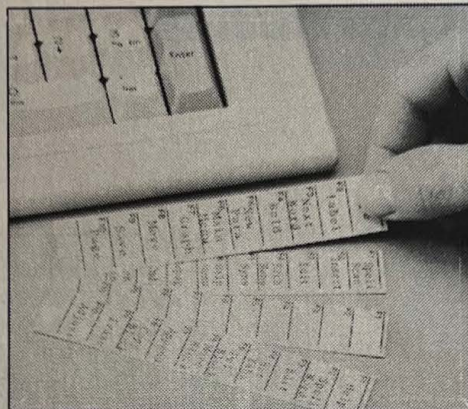
Turbo Tutor is currently available for \$39.95 plus \$5 S/H from Borland International, 4585 Scotts Valley Drive, Scotts Valley, CA 95066; (408) 438-8400.

WORD WIZARD is an addition to *Turbo Lightning*. It is a collection of word

games and crossword puzzle solvers. You'll find four challenging and educational games plus three solver utilities — puzzles, scrambles, spell searches, synonym seekings, hidden words, crossword solutions and more.

Lightning Word Wizard includes complete, commented *Turbo PASCAL* source code and all the technical information you'll need to understand and work with *Turbo Lightning*.

Lightning Word Wizard requires MS-DOS 2.11 and 256K (along with *Turbo Lightning*). It is currently available for \$69.95 plus \$5 S/H from Borland International, 4585 Scotts Valley Drive, Scotts Valley, CA 95066; (408) 438-8400.



BRADY ID SYSTEM is a convenient and flexible method for identification of function keys on computer keyboards. The Brady Identification System consists of a clear, pressure-sensitive carrier strip that adheres to the keyboard and a durable, removable identifier that can be custom-printed to define function key applications designated in software programs.

The ID system is offered in stock configurations for most keyboards. Custom die-cut configurations are also available. The identifier strip can be custom printed in an unlimited range of computer-matched colors.

The Brady Identification System is currently available from W.H. Brady Company, Nameplate Division, 750 W. Glendale Ave., P.O. Box 571, Milwaukee, WI 53201; (414) 332-7620.

SUNOL SYSTEMS has recently signed Cypress Distributing in San Jose, Calif. and BFA Corporation in Scottsdale, Ariz. to sell their full line of universal networking mass storage hard disk drives.

Sunol Systems sells hard disk drives — designed to work with Sanyo computers — that range in size from 10, 16, 25, 45, 70 and 110 megabytes with an optional 26-

megabyte, cartridge-type backup. Each distributor has direct contact with Sunol's sales support and technical staff.

For further information, contact Sunol Systems, Inc., P.O. Box 1777, Pleasanton, CA 94566; (415) 484-3322.

UPDATE INFO: *RightWriter Version 2.0* is currently available. Improvements to this program include: over 700 new rules, a 45,000-word standard dictionary, pathname support for hard disks, and full compatibility with a variety of word processors.

RightWriter Version 2.0 is currently available for \$95 (\$24.95 for registered users), from Decisionware, Inc., 2033 Wood Street, Suite 218, Sarasota, FL 33577; (813) 952-9211.

EVERCOM II EV-920 is a new 1200 Baud internal modem for putting your computer online. The EV-920 is a short card that should fit the slots of any of the true IBM PC compatibles: the Sanyo 675, 775, 880 and 990 series. It is fully compatible with the Hayes Smartmodem command structure and adds a few of its own, including keyboard control of the speaker volume, a command to display the current communications parameters, and a full response set that may be switched on for troubleshooting. Featured is the capability of the modem to detect an extension handset going off-hook, switching automatically from data to voice without dropping the carrier.

Included with the EV-920 is *BitCom*, a communications program that supports Xmodem protocol file transfers and features a dialing directory, VT-100 and other terminal emulations, and script file support for automating online procedures.

The Evercom EV-920 is currently available for \$249 from Everex Systems, Inc., 47777 Warm Springs Blvd., Fremont, CA 94539; (415) 498-1111.

The *Seal of Certification* program is open to all manufacturers of products for Sanyo MBC-550/555, 675, 775 and 885 computers, regardless of whether they advertise in *SOFT SECTOR*.

By awarding a *Seal*, the magazine certifies the product does *exist* — that we have examined it and have a sample copy — but this *does not* constitute any guarantee of satisfaction. As soon as possible, these hardware or software items will be forwarded to *SOFT SECTOR* reviewers for evaluation.

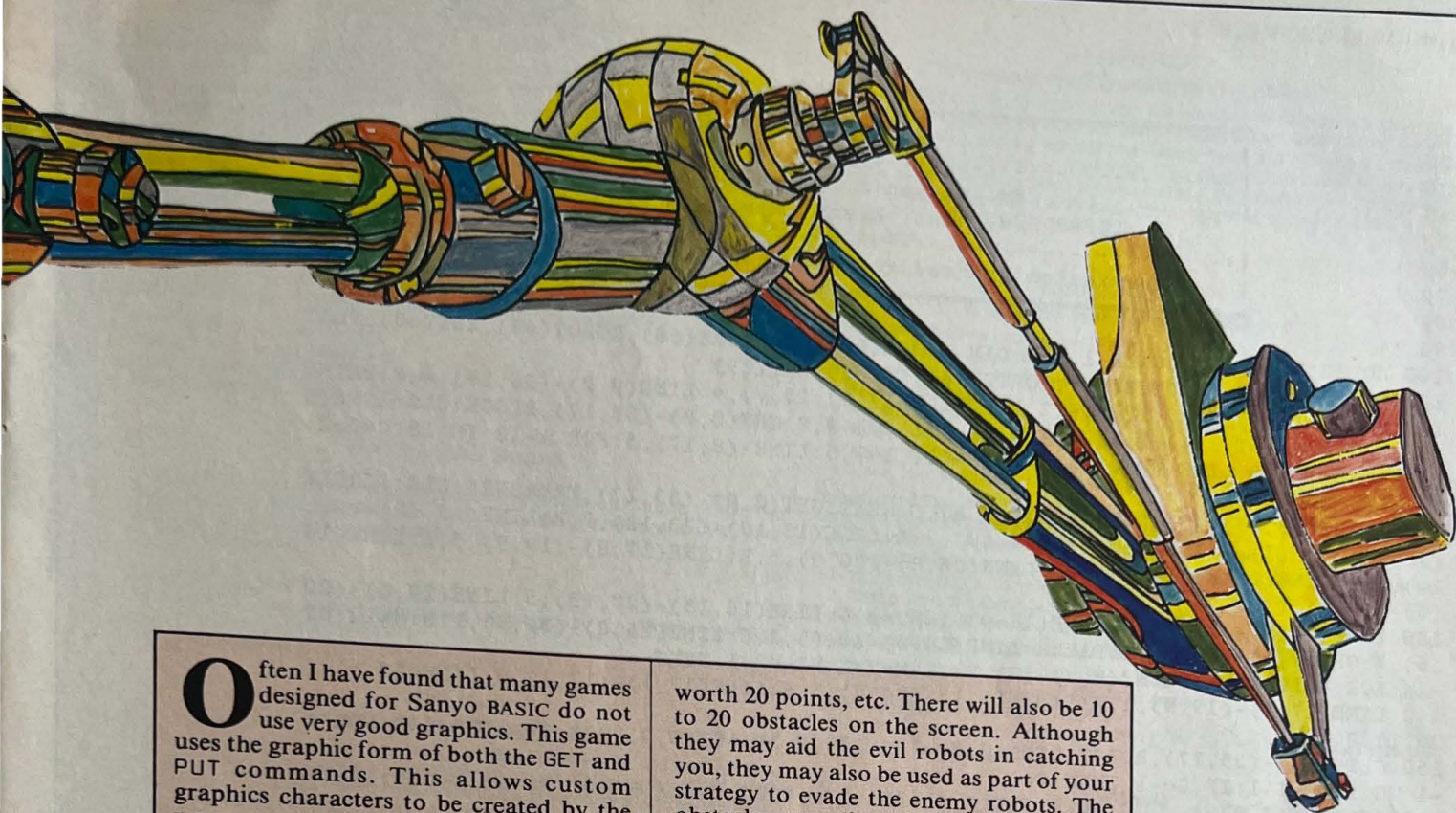


Escape

Requires 256K

By Steven James Baldwin





Often I have found that many games designed for Sanyo BASIC do not use very good graphics. This game uses the graphic form of both the GET and PUT commands. This allows custom graphics characters to be created by the user.

Unfortunately, this game requires 256K because of the use of these commands. But, if you have enough knowledge of Sanyo BASIC you may remove lines 110 through 170, and replace all PUT commands with the SYMBOLIZED characters of your choice. When replacing PUT statements with SYMBOLIZED characters, you should always ensure that the same character is used consistently each time you see the repeated PUT command.

In this game, the object is to collect all of the treasure in the current wave and at the same time avoid being caught by the cunning, evil robots. These enemy robots are always lurking about with only one thing on their mind: to eliminate you. After picking up all of the treasure, a blinking portal will appear on the screen. You must reach this portal to advance to the next wave.

At first, you will start with only three enemy robots to worry about, but at the beginning of each wave, one robot will be added until they reach a total of six. In each wave there will be only five treasures, which will be worth 10 times the wave number. Thus, each Wave 1 treasure is worth 10 points, Wave 2 treasures are

worth 20 points, etc. There will also be 10 to 20 obstacles on the screen. Although they may aid the evil robots in catching you, they may also be used as part of your strategy to evade the enemy robots. The obstacles are solid objects; therefore, you cannot pass through them and neither can the enemy.

At the bottom of the screen you will find the information center, in which there are three individual boxes that contain all game information. In the lower left-hand box the number of lives remaining, score and wave number are recorded. The middle box handles the pause message and gives you a look at the game's characters before the first game begins. Last but not least, handled in the lower right-hand box, you will find the names of the five all-time best players with the scores they have achieved.

The movement of the player's robot is guided by the directional arrows on the numeric keypad. To activate the pause function, simply depress the space bar. When you are ready to continue, simply hit any key.

Good luck and have fun!

Escape Breakdown Chart

| | |
|---------|---|
| 10-90 | Title and Acknowledgments |
| 100 | Dimensions |
| 110-170 | Drawing and Placement of Characters into Arrays |
| 180-230 | The Playing Screen |
| 240-360 | Opening Graphics |
| 370-520 | New Wave |
| 530-720 | Player Control |
| 730-800 | Enemy Movement |
| 810-840 | General Use GOSUBs |
| 850-940 | File GOSUBs |

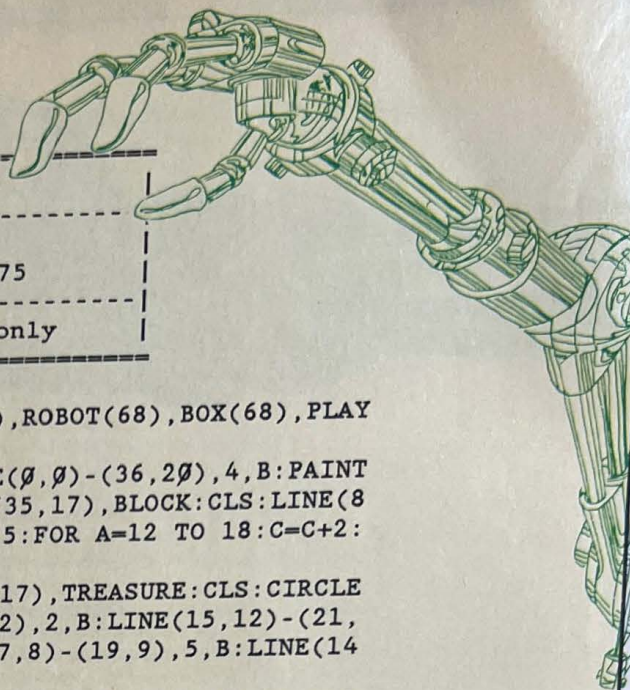
Steven Baldwin is a 16-year-old high school student who has been programming in Sanyo BASIC for over a year. He may be contacted at 12095 S.W. 47th, Miami, FL 33175; (305) 226-7201.

The listing: ESCAPE.BAS

```

100 '
200 '
300 '
400 '
500 '
600 '
700 '
800 '
900 '
1000 COLOR 2,0:CLS:LOCATE 1,1,0:DIM BLOCK(68),TREASURE(68),ROBOT(68),BOX(68),PLAY
ER(68),PORT(68),A(20),B(20),PORT2(68),L(136),GL(119)
1100 SYMBOL(1,1),CHR$(177),4,2,1:CIRCLE(17,9),15,,,4:LINE(0,0)-(36,20),4,B:PAINT
(1,1),2,4:PAINT(1,1),0,4:LINE(0,0)-(36,20),0,B:GET(2,0)-(35,17),BLOCK:CLS:LINE(8
,17)-(25,17),5:LINE-(22,14),5:LINE-(11,14),5:LINE-(8,17),5:FOR A=12 TO 18:C=C+2:
IF C=6 THEN C=2
1200 PAINT(15,15),4,5:LINE(0,A)-(5,A),C:NEXT:GET(0,0)-(33,17),TREASURE:CLS:CIRCLE
(18,7),8,.5,1,,4:LINE(10,7)-(26,10),2,B:LINE(13,10)-(23,12),2,B:LINE(15,12)-(21
,14),2,B:LINE(10,8)-(6,9),5,B:LINE(26,8)-(30,9),5,B:LINE(17,8)-(19,9),5,B:LINE(14
,6)-(22,5),1,BF
1300 LINE(22,6)-(22,6),7:LINE(18,4)-(20,4),5:LINE(16,15)-(20,15),5:LINE(20,6)-(20
,6),7:GET(2,0)-(35,17),PLAYER:LINE(10,8)-(6,9),1,B:LINE(26,8)-(30,9),1,B:H=12:H2
=24:FOR V=11 TO 14:LINE(H,V)-(H2,V),1:H=H+1:H2=H2-1:NEXT
1400 LINE(17,8)-(19,9),1,B:LINE(17,1)-(20,2),5,B:LINE(17,1)-(17,1),0:LINE(20,1)-(
20,1),0
1500 GET(2,0)-(35,17),ROBOT:LINE(0,0)-(33,17),0,BF:GET(0,0)-(33,17),BOX:C=1:FOR A
=1 TO 16:C=C+1:IF C=-1 THEN C=1
1600 CIRCLE(17,9),A,,,C:NEXT:GET(0,0)-(33,17),PORT:C=1:FOR A=1 TO 16:C=C+1:IF C=
3 THEN C=1
1700 CIRCLE(17,9),A,,,C:NEXT:GET(0,0)-(33,17),PORT2:CLS
1800 FOR A=2 TO 73:LOCATE 1,A:PRINT CHR$(205):LOCATE 18,A:PRINT CHR$(205):LOCATE
24,A:PRINT CHR$(205):NEXT:FOR A=2 TO 23:LOCATE A,1:PRINT CHR$(186):LOCATE A,74:P
RINT CHR$(186):NEXT:LOCATE 24,1:PRINT CHR$(200):LOCATE 24,74:PRINT CHR$(188):LOC
ATE 1,74
1900 PRINT CHR$(187):LOCATE 1,1:PRINT CHR$(201):LOCATE 18,1:PRINT CHR$(204):LOCAT
E 18,74:PRINT CHR$(185):LOCATE 18,17:PRINT CHR$(203):LOCATE 24,17:PRINT CHR$(202
):FOR A=19 TO 23:LOCATE A,17:PRINT CHR$(186):LOCATE A,51:PRINT CHR$(186):NEXT:LO
CATE 18,51
2000 PRINT CHR$(203):LOCATE 24,51:PRINT CHR$(202):SYMBOL(425,141),"Best",1,1,2,1:
SYMBOL(416,141),"Five",1,1,3,1:LOCATE 18,55:PRINT CHR$(209):LOCATE 24,55:PRINT C
HR$(207):FOR A=19 TO 23:LOCATE A,55:PRINT CHR$(179):NEXT:SYMBOL(600,2),"Escape",
1,1,3,1:NU=3
2100 SYMBOL(600,102),"S.J.Baldwin",1,1,2,1:COLOR 4,0:LIVES=3:SA=1:WAVE=1:SCORE=0:
LOCATE 19,3:PRINT "Lives - 3":LOCATE 21,3:PRINT "Score - 0":LOCATE 23,3:PRIN
T "Wave - 1"
2200 IF RE=1 THEN 370
2300 GOSUB 890:IF LOF(1)=0 THEN PUT #1,1:CLOSE ELSE GET #1,1:FOR A=1 TO 5:REC(A)=
CVS(PSC$(A)):PNAM$(A)=NA$(A):NEXT:CLOSE:LO=18:COLOR 4,0:FOR A=1 TO 5:GOSUB 900:N
EXT
2400 C=2:H=41:H2=552:V=1:V2=141:FOR D=1 TO 8:H=H+10:H2=H2-10:V=V+5:V2=V2-5:C=C-1:
IF C=-1 THEN C=1
2500 LINE(H,V)-(H2,V2),C,BF:LINE(H,V)-(H2,V2),2,B:NEXT
2600 FOR A=248 TO 328 STEP 16:SYMBOL(A,51),"",2,2,1:FOR B=1 TO 100:NEXT:READ A$:
SYMBOL(A,50),A$,2,2,5:SYMBOL(A+2,51),A$,2,2,1:OUT &H38,5:SYMBOL(A,51),"",2,2,0:
SYMBOL(A+16,51),"",2,2,1:NEXT:DATA E,S,C,A,P,E:SYMBOL(A,51),"",2,2,0
2700 FOR A=196 TO 388 STEP 8:READ A$:IF A$="" THEN A$=CHR$(32)
2800 SYMBOL(A,71),"",1,1,4:SYMBOL(A,70),A$,1,1,2:FOR B=1 TO 50:NEXT:S=S+2:OUT &H
38,S:SYMBOL(A,71),"",1,1,0:SYMBOL(A+8,71),"",1,1,4:NEXT:DATA (.B,y,-,S,t,e,v,e
,n.,J,a,m,e,s.,B,a,l,d,w,i,n.):SYMBOL(A,71),"",1,1,0:COLOR 4,0
2900 LOCATE 12,31:PRINT "Space To Begin":FINISH=140:T=1
3000 FOR A=360 TO FINISH STEP -3:ON T GOTO 310,320,330,340

```



A-OK Computers

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The A-OK Board lets you triple (!) your processor speed and nearly quadruple your RAM. The A-OK Board plugs inside your Sanyo with no soldering or trace cutting (either would void your Sanyo motherboard's 1 year warranty). The A-OK Board's 8088-1 does all your processing at 10 MHz, almost three times the speed. Three banks of 256K chips on The A-OK Board combined with 192K on your motherboard gives you 960K of contiguous RAM. The A-OK Board has a socket to accept a highly compatible ROM BIOS. See our TurboDrive550 ad about 800K ramdisks. Options include a real-time clock/calendar. The crystal and 8088-1 are socketed for easy upgrade to faster processors as they become available. The A-OK Board is unique in that it increases processing speed without driving the motherboard faster. Running the motherboard faster can severely reduce the lifetime of chips soldered in the motherboard. The A-OK Board is The Ultimate Upgrade.

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|-----------------------------------|-------|
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| | |
|------------------|-------|
| A-OK Video Board | \$185 |
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PC-RS232 Option

This option for the A-OK Video Board allows you to run IBM communication software on your Sanyo!

| | |
|-----------------|------|
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"The Linker for Turbo Pascal"

TP•Linker accelerates the compilation of your Turbo Pascal 2.0 and 3.0 programs. TP•Linker provides a program that turns your debugged and compiled Turbo Pascal procedures into compact, linkable external procedures. Because they are already compiled, these procedures link instantly into the code you are debugging. TP•Linker's linkable procedures use much less memory than the Turbo Pascal source code they come from. Thus you can bring them in off disk faster and store more of them on RAM disk. TP•Linker is easy to use, self-documenting, and works from the Turbo Pascal Program Development Environment. An extra bonus—now you can sell procedures written in Turbo Pascal as linkable procedures without having to disclose your source code. A-OK is looking for high-quality Turbo Pascal libraries to market. Why waste time recompiling code that you know works? TP•Linker is the ideal upgrade for Turbo Pascal.

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A-OK searched the world to bring you the best business graphics for your Sanyo. We are delighted by what we found—SANYGRAF. SANYGRAF's well thought-out menus and superb documentation, make this extremely versatile software very easy to master. SANYGRAF is very fast and even faster with an 8087. SANYGRAF supports popular plotters. SANYGRAF is so good that Sanyo Australia supplies it with every color graphics system it sells. 2.11, 256K, one DSDD or DSQD drive required.

| | |
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"A Quality Ram Disk for Sanyo"

TurboDrive550 turns your unused RAM into a disk drive.

TurboDrive550 is very fast.

- Speeds up all disk intensive software.
- Makes WordStar and FORMSORT run more quickly.
- Accesses disk 75,000 times faster than hard disk.
- Makes 800K ramdisks on the A-OK Board.
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Compare TurboDrive550's features to the competition.

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- TurboDrive550 protects you from allocating more space than is available.
- A-OK provides a COM file in MS-DOS 1.25 which lets you gracefully free TurboDrive550's space.
- TurboDrive550 lets you use its menu or parameters.

TurboDrive 550 is The Phantom Buster.

TurboDrive550 comes FREE with every new A-OK DOS 1-4™ and is available as a \$7 upgrade to current A-OK DOS owners.

| | |
|--|------|
| TurboDrive550 for other Sanyo DOSs | \$33 |
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Increase your disk capacity to 800K per drive using A-OK's DSQD Kit™ which includes: 2 first quality new TEAC 55F double-sided quad-density (DSQD) drives which replace the TEACs in your Sanyo, A-OK DOS-4, complete easy instructions, and all parts needed.

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|----------|-------|
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|----------|-------|

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| | |
|----------|-------|
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|--|------|
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```

310 PUT(A,155),PLAYER:GOSUB 360:NEXT:LOCATE 19,19:PRINT "You":FINISH=195:T=2:GOT
O 300
320 PUT(A,155),ROBOT:GOSUB 360:NEXT:LOCATE 23,25:PRINT "Enemy":FINISH=252:T=3:GO
TO 300
330 PUT(A,155),BLOCK:GOSUB 360:NEXT:LOCATE 19,31:PRINT "Obstacle":FINISH=305:T=4
:GOTO 300
340 PUT(A,155),TREASURE:GOSUB 360:NEXT:LOCATE 23,37:PRINT "Treasure":LOCATE 19,4
5:PRINT "Portal"
350 FOR I=1 TO 10:IF N=1 THEN N=0:PUT(357,155),PORT2:FOR A=1 TO 500:NEXT:GOSUB 3
60:NEXT:LINE(135,141)-(401,185),0,BF:GOTO 290 ELSE N=1:PUT(357,155),PORT:FOR A=1
TO 500:NEXT:GOSUB 360:NEXT
360 X$=INKEY$:IF X$=" " THEN LINE(8,5)-(585,137),0,BF:COLOR 4,0 ELSE RETURN
370 LINE(135,141)-(401,185),0,BF:COLOR 2,0:LOCATE 20,26:PRINT "One Moment Please
":COLOR 4,0:LOCATE 22,23:PRINT "While Wave"WAVE"Is Created":IF WAVE>1 THEN SCORE
=SCORE+50:LOCATE 21,10:PRINT SCORE
380 IF SA>1 AND SA<5 THEN NU=NU+1
390 FOR A=1 TO 119:L(A)=0:GL(A)=0:NEXT:GOSUB 815:R=ABS(INT(RND*7)):N=R*18+8:GOSU
B 815:X=ABS(INT(RND*11))+10:FOR A=1 TO X
400 GOSUB 815:R=ABS(INT(RND*17)):A(A)=R*34+8:GOSUB 815:RR=ABS(INT(RND*7)):B(A)=R
R*18+8:EX=(R+1)+(RR*17)
410 IF A(A)=8 AND B(A)=62 OR B(A)=N THEN 400 ELSE IF L(EX)=1 THEN 400 ELSE L(EX)
=1:PUT(A(A),B(A)),BLOCK:OUT &H38,10:NEXT:FOR A=1 TO 5
420 GOSUB 815:R=ABS(INT(RND*17)):GH(A)=R*34+8:GOSUB 815:RR=ABS(INT(RND*7)):GV(A)
=RR*18+8:EX=(R+1)+(RR*17)
430 IF L(EX)=1 OR GH(A)=8 AND GV(A)=62 THEN 420 ELSE IF GL(EX)=3 THEN 420
440 IF L(EX-1)=1 OR GH(A)-34=-26 THEN 450 ELSE 490
450 IF L(EX+1)=1 OR GH(A)+34=586 THEN 460 ELSE 490
460 IF EX-17<1 THEN 480 ELSE 470
470 IF L(EX-17)=1 THEN 480 ELSE 490
480 IF L(EX+17)=1 OR GV(A)+18=134 THEN 420
490 PUT(GH(A),GV(A)),TREASURE:OUT &H38,10:GL(EX)=3:NEXT A:LL=52:FOR A=1 TO NU
500 GOSUB 815:R=ABS(INT(RND*17)):H(A)=R*34+8:GOSUB 815:RR=ABS(INT(RND*7)):V(A)=R
R*18+8:EX=(R+1)+(RR*17)
510 IF L(EX)=2 OR L(EX)=1 OR H(A)=8 AND V(A)=62 THEN 500 ELSE PUT(H(A),V(A)),ROB
OT:OUT &H38,10:RL(A)=(R+1)+(RR*17):L(EX)=2
520 NEXT:PH=8:PV=62:PUT(PH,PV),PLAYER:LINE(135,141)-(401,185),0,BF
530 X$=INKEY$
540 IF X$=CHR$(28) THEN PH=PH-34 ELSE 560
550 IF L(LL-1)=1 THEN PH=PH+34:OUT &H38,5:GOTO 660 ELSE LL=LL-1:PUT(PH+34,PV),BO
X:OUT &H38,5:GOTO 650
560 IF X$=CHR$(29) THEN PH=PH+34 ELSE 580
570 IF L(LL+1)=1 THEN PH=PH-34:OUT &H38,5:GOTO 660 ELSE LL=LL+1:PUT(PH-34,PV),BO

```

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"Upgrade your MS-DOS 1.25 or 2.11 and Video Board"

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- **A-OK DOS** supports RAM expansion to 960K.
- With the Video Board, **A-OK DOS** uses 24K less memory than the "competition".
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- **A-OK DOS** now includes free high-quality ramdisk software—**TurboDrive550** (a \$33 value).
- Still the only text dump for 2.11 automatically transferred via **FORMAT /S**.
- Prints a screenful of text to any Sanyo-compatible printer.
- Interactive mode
 - It works with one keystroke in DOS, BASIC and all other software packages that run on the Sanyo.
 - Does not interfere with program execution or affect the data.
- Batch mode
 - Can be activated in BASIC by a one-line command.
 - Interrupt-driven and can be called from programming languages.
- Supports the only graphics screen dump software built into DOS—**PrintScreen550**.
- Includes a special "Sorted Directory" utility.
- Has a utility to strip the high-order bit off WordStar document files.
- User-controlled scrolling in all subsystems, not just DOS.
- **A-OK DOS** system messages are easier to understand.
- Supports up to 4 disk drives.

A-OK DOS versions for MS-DOS 1.25 correct flaws in MS-DOS 1.25 without sacrificing its strengths.

- All **A-OK DOS/1.25** are much faster and use far less memory than any version of MS-DOS 2.11.
- Runs all software that comes with the Sanyo.

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- PLUS special support for Sidekick™ and Flight Simulator™.
- Support installable drivers for hard disks, etc.

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"Not just another Double-Sided DOS"

- Any combination of up to four single and double-sided drives.
- Double-sided drives support single and double-sided diskettes.
- 8 and 9 sector formats—360K, 320K, 180K, and 160K.

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- All the features and formats of **A-OK DOS-1**
- PLUS it reads, writes, and formats 10-sector formats
 - 400K per double-sided diskette on DSDD drives
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 - uses ordinary diskettes
 - pays for itself in saved diskettes.

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"A-OK DOS for Double and Quad-Density Drive Systems"

- All the features of **A-OK DOS-2**
- PLUS up to 4 double-density and quad-density drives
 - on double-density drives:
 - reads and writes all formats read by 1.25 and 2.11
 - reads, writes, and formats 200K SSDD diskettes
 - reads, writes and formats 400K DSDD diskettes
- on quad-density drives:
 - reads, writes, and formats 730K and 800K on ordinary diskettes.

A-OK DOS-3/1.25 or **A-OK DOS-3/2.11** and Video Board \$55

A-OK DOS-4™

"The Standard Quad-Density DOS"

- All the features of **A-OK DOS-2**
- PLUS up to 4 quad drives—3.2 Megabytes of removable medium!
 - quad drives read all diskettes written by MS-DOS 1.25 and 2.11
 - quad drives read, write and format 160K, 180K, 200K, 320K, 360K, 400K, 730K, 800K formats on ordinary diskettes.
 - will not run Prolok™ disks.

We at A-OK Computers thank you for making **A-OK DOS-4™** the standard DOS for quad-density drives on the Sanyo. Thousands of copies of **DOS-4™** are now in use in the most demanding applications—yours. Potential bugs have been identified and corrected, making **DOS-4** a mature, well seasoned tool. Your constant feedback has resulted in the successive refinement of our documentation. After thorough testing and comparison to would-be competitors, Scottsdale Systems, America's No. 1 seller of Sanyos, selected **DOS-4** as the standard DOS supplied with their Silver Fox™. (**HAGEN-DOS™** is **A-OK DOS-4**). And of course, Midwest Micro Peripherals—one of America's largest sellers of computer equipment has selected **A-OK DOS-4** for their quad-based Sanyo. Because **DOS-4** is now the standard, our 720K and 800K formats are also regarded as the standard. Of the quad-density operating systems, only **A-OK DOS-4** supports the very popular **PrintScreen550**. *Soft Sector* sums it up well in their September 1984 review entitled "A-OK DOS and **PrintScreen550**—An Unbeatable Combination".

A-OK DOS-4 is the choice of OEMs. Don't trust your work to an experimental DOS, be sure your operating system is A-OK.

Look for these features in a quad-density drive DOS:

1. Unique support for Lotus 1-2-3™ and Picasso™ on quad drives.
2. Still the only DOS which you can install with quad drives.
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6. FORMATS, READS, WRITES, and DISKCOPYs all MS-DOS standard formats employed by the Sanyo 550 Series.
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9. Supports the only graphics screen dump software built into the DOS—**PrintScreen550**.

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PrintScreen550™

"Fast, High-Resolution Graphics and Text from Screen to Printer with One Keystroke"

- **PrintScreen550** now also supports the Video Graphics Board.
- **PrintScreen550** is designed for the everyday needs of most users.
- **PrintScreen550** capabilities
 - Prints a screenful of graphics to most popular printers.
 - This prints everything on the screen whether it's graphics or text.
 - User has the option to rotate the image on the paper. This permits Okidata 92s and other printers with less than 640 horizontal dot positions to print out the full screen.
 - Turns your Sanyo into a high-resolution graphics machine.
 - Multiscreen facility permits a printed image to be 640 dots by an almost unlimited number of dots in the perpendicular direction.
- **PrintScreen550** is flexible and easy to use.
 - Interactive mode
 - Works like the "Print Screen" button on the IBM-PC.
 - One keystroke does it all. No need to embed commands in BASIC. No extra programs to execute. Same single keystroke works in DOS, BASIC and all other software packages that run on the Sanyo.
 - Batch mode can be activated in BASIC by a one-line command.
- **PrintScreen550** is very fast and a lot of fun!

A-OK's PrintScreen550 software pulls the Print Screen button off the IBM-PC and puts it on your Sanyo MBC-550 Series computer.

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```

X:OUT &H38,5:GOTO 650
580 IF X$=CHR$(30) THEN PV=PV-18 ELSE 600
590 IF LL-17<1 THEN LL=LL-17:OUT &H38,5:GOTO 650 ELSE IF L(LL-17)=1 THEN PV=PV+1
8:OUT &H38,5:GOTO 660 ELSE LL=LL-17:PUT(PH,PV+18),BOX:OUT &H38,5:GOTO 650
600 IF X$=CHR$(31) THEN PV=PV+18 ELSE 620
610 IF L(LL+17)=1 THEN PV=PV-18:OUT &H38,5:GOTO 660 ELSE LL=LL+17:PUT(PH,PV-18),
BOX:OUT &H38,5:GOTO 650
620 IF X$=CHR$(32) THEN 630 ELSE 650
630 LOCATE 20,30:PRINT "Depress":COLOR 2,0:LOCATE 21,30:PRINT "Any Key":COLOR 4,
0:LOCATE 22,30:PRINT "To Cont."
640 X$=INKEY$:IF X$<>" " THEN LINE(135,141)-(401,185),0,BF ELSE 640
650 IF PH<8 THEN LL=LL+1:PH=8 ELSE IF PH>552 THEN LL=LL-1:PH=552 ELSE IF PV<8 TH
EN LL=LL+17:PV=8 ELSE IF PV>116 THEN LL=LL-17:PV=116
660 PUT(PH,PV),PLAYER
670 IF GL(LL)=3 THEN GL(LL)=0:K=K+1:GOSUB 810
680 IF K=5 THEN GOSUB 815:R=ABS(INT(RND*X))+1:AA=A(R):BB=B(R):L((((A(R)-8)/34)+1
)+(((B(R)-8)/18)*17))=0:A(R)=0:B(R)=0:PUT(AA,BB),PORT:SCORE=SCORE+50:LOCATE 21,1
0:PRINT SCORE:FOR A=0 TO 250 STEP 10:OUT &H38,A:NEXT:K=6
690 IF K=6 THEN PUT(AA,BB),PORT:K=7:GOTO 710
700 IF K=7 THEN PUT(AA,BB),PORT:K=6
710 IF L(LL)=2 THEN BEEP:LIVES=LIVES-1:LOCATE 19,10:PRINT LIVES:LL=52:PUT(PH,PV)
,ROBOT:PH=8:PV=62:PUT(PH,PV),PLAYER:IF LIVES<1 THEN 820
720 IF PH=AA AND PV=BB AND K>5 THEN FOR A=1 TO 80:OUT &H38,A:NEXT:LINE(8,5)-(585
,137),0,BF:WAVE=WAVE+1:LOCATE 23,9:PRINT WAVE:AA=0:BB=0:K=0:SA=SA+1:LL=52:COLOR
4,0:GOTO 370
730 Z=ABS(INT(RND*NU))+1:IF PH<H(Z) THEN H(Z)=H(Z)-34:V1=-1:V2=34:V4=0:R=1:V3=1:
GOTO 770 ELSE 740
740 IF PH>H(Z) THEN H(Z)=H(Z)+34:V1=1:V2=-34:V4=0:R=2:V3=-1:GOTO 770 ELSE 750
750 IF PV<V(Z) THEN V(Z)=V(Z)-18:V1=-17:V2=0:V4=18:R=3:V3=17:GOTO 770 ELSE 760
760 IF PV>V(Z) THEN V(Z)=V(Z)+18:V1=17:V2=0:V4=-18:R=4:V3=-17:GOTO 770 ELSE 800
770 IF L(RL(Z)+V1)=1 OR L(RL(Z)+V1)=2 THEN H(Z)=H(Z)+V2:V(Z)=V(Z)+V4:ON R GOTO 7
40,750,760,800 ELSE RL(Z)=RL(Z)+V1:L(RL(Z)+V3)=0:L(RL(Z))=2
780 IF GL(RL(Z)+V3)=3 THEN PUT(H(Z)+V2,V(Z)+V4),TREASURE:GOTO 790 ELSE PUT(H(Z)+
V2,V(Z)+V4),BOX
790 PUT(H(Z),V(Z)),ROBOT:IF L(LL)=2 THEN BEEP:LIVES=LIVES-1:LOCATE 19,10:PRINT L
IVES:PH=8:PV=62:LL=52:PUT(PH,PV),PLAYER:IF LIVES<1 THEN 820
800 GOTO 530
810 FOR B=1 TO 10:OUT &H38,B:SCORE=SCORE+SA:LOCATE 21,10:PRINT SCORE:NEXT:RETURN
815 RS=INP(32):R1=INP(34):RS=256*R1-32768!:R1=INP(34):RANDOMIZE (RS):RETURN
820 FOR A=1 TO 2:FOR B=1 TO 4:SYMBOL(194,143),"GAME OVER",2,2,B:OUT &H38,7:NEXT:
NEXT:GOSUB 850:COLOR 2,0:LOCATE 22,26:PRINT "PLAY AGAIN (Y/N)"
830 X$=INKEY$:IF X$="N" OR X$="n" THEN CLS:END ELSE IF X$="Y" OR X$="y" THEN 840
ELSE 830
840 NU=3:RE=1:COLOR 4,0:LOCATE 23,23:PRINT "Press ANY Key To Begin":X$=INKEY$:IF
X$<>" " THEN LINE(8,5)-(585,137),0,BF:K=0:AA=0:BB=0:GOTO 210 ELSE 840
850 IF SCORE>REC(5) THEN SYMBOL(194,143),"GAME OVER",2,2,0:LOCATE 19,23:PRINT "N
AME (Max 8 characters)":COLOR 3,0:LOCATE 20,29:INPUT PNAME$:IF LEN(PNAME$)<8 THEN
PNAME$=PNAME$+STRING$(8-LEN(PNAME$),32) ELSE PNAME$=LEFT$(PNAME$,8) ELSE RETURN
860 FOR A=5 TO 1 STEP -1:IF SCORE>REC(A) THEN 870 ELSE 940
870 IF PNAME$(A)="" THEN PNAME$(A)=" "
880 REC(A+1)=REC(A):REC(A)=SCORE:PNAME$(A+1)=PNAME$(A):PNAME$(A)=PNAME$:LO=18:GOSUB
920:NEXT:GOTO 940
890 OPEN"R",#1,"ESCAPE.REC":FOR A=1 TO 5:FIELD #1,A*12-12 AS DU$,8 AS NA$(A),4 A
S PSC$(A):NEXT:RETURN
900 IF REC(A)>=100 AND REC(A)<1000 THEN LO2=69 ELSE IF REC(A)>=1000 AND REC(A)<10000
THEN LO2=68 ELSE IF REC(A)>=10000 THEN LO2=67 ELSE LO2=70
910 LO=LO+1:LOCATE LO,58:PRINT PNAME$(A):LOCATE LO,LO2:COLOR 2,0:PRINT REC(A):COL
OR 4,0:RETURN
920 COLOR 4,0:FOR B=1 TO 5:LO=LO+1:GOSUB 930:LOCATE LO,58:PRINT PNAME$(B):COLOR 2
,0:LOCATE LO,LO2:PRINT REC(B):LOCATE LO,67:PRINT CL$:COLOR 4,0:NEXT:RETURN
930 IF REC(B)>=100 AND REC(B)<1000 THEN LO2=69:CL$=" ":RETURN ELSE IF REC(B)>1000
AND REC(B)<10000 THEN LO2=68:CL$=" ":RETURN ELSE IF REC(B)>10000 THEN LO2=67:CL$=
" ":RETURN ELSE LO2=70:CL$=" ":RETURN
940 GOSUB 890:FOR I=1 TO 5:LSET NA$(I)=PNAME$(I):LSET PSC$(I)=MK$(REC(I)):NEXT:P
UT #1,1:CLOSE:RETURN

```


Ready!

Aim!

Fire!



The game presented here is an artillery tank battle requiring two players. The object is to raise your cannon to the proper angle to shoot over a barrier and hit your opponent while both of you are trying to dodge the incoming rounds. To slightly complicate matters, the two players may not be at the same altitude. The playing fields and the barrier are of random height.

As written, the game can only be run with the keyboard because there are more commands than are available on most joysticks. Each player has a control console of seven keys centered around the 'F' and '5' keys as pictured on the next page.

The program will only recognize capital letters and numerals. Thus, you must have the LOCK and NUM

LOCK keys on. The NUM LOCK key does not have an indicator light, so if the right tank is inactive, try pressing this key again.

The program is broken into several subroutines. Draw screen and draw tank are start up only. In the draw tank routine, a GET statement is used to save the screen pixel information of the tank. In the move tank section this information is placed on the screen by a PUT statement.

The fire rounds routine does most of the work for the program. The rounds themselves are drawn according to the formula for simple projectile motion, with necessary modifications to the computer world. Lines 810 to 930

Artillery Tank Battle

Requires 256K

By Timothy O. Goyette

test for obstacles and draw the rounds for the right tank. Lines 950 to 1080 do the same for the left tank. The remainder of the routine handles hits on the opponent's tanks.

The main section of the program, lines 70 to 340, reads commands from the keyboard and sets parameters for the subroutines.

Hints For Tank Battle

The best angle for the cannon is between 65 and 85 degrees. When the game begins, it is wise to immediately begin raising the cannon. It is most difficult to be hit while against the outer boundary or at the barrier.

Try to stay away from the middle as much as possible. The program only accepts one input per pass. If you and your opponent press keys at approximately the same time, only one command will be accepted. It is therefore suggested that you press your command key twice.

There is one modification that may be popular. As written, the traces of the rounds remain permanently on the screen. This is a convenient reference for setting proper angle and field position. By adding two lines, these traces can be eliminated. Copy lines 930 and 1080 into 935 and 1085, respectively. In these statements change the color from 4 to 3. Doing this, however, will cause the game to run a bit slower.

| | | |
|-------------------|-------------------|-----------------|
| Stop Cannon E | Raise Cannon R | Stop Tank T |
| Move Left D | Fire F | Move Right G |
| Lower Cannon V | | |

| | | |
|-------------------|-------------------|-----------------|
| Stop Cannon 7 | Raise Cannon 8 | Stop Tank 9 |
| Move Left 4 | Fire 5 | Move Right 6 |
| Lower Cannon 2 | | |

The listing: BATTLE.BAS

```

10 DIM A(10,10)
20 COLOR 0,3
30 GOSUB 540
40 TNK1=82:TNK2=453
50 COLOR 0,3
60 GOSUB 360
70 X$=INKEY$
80 IF X$="9" THEN MOV2=0
90 IF X$="4" THEN MOV2=-1:GOTO 160
100 IF TNK2<340 THEN MOV2=0
110 IF X$="6" THEN MOV2=1
120 IF TNK2>582 THEN MOV2=0
130 IF X$="T" THEN MOV1=0
140 IF X$="D" AND TNK1>6 THEN MOV1=-1:GOTO 210
150 IF TNK1<6 THEN MOV1=0
160 IF X$="G" THEN MOV1=1

```

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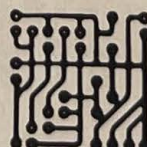
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170 IF TNK1>240 THEN MOV1=0
180 IF X$="7" THEN LON2=0
190 IF X$="8" AND ANG2<88 THEN LON2=1:GOTO 240
200 IF ANG2>87 THEN LON2=0
210 IF X$="2" THEN LON2=-1
220 IF ANG2<1 THEN LON2=0
230 IF X$="E" THEN LON1=0
240 IF X$="R" AND ANG1<88 THEN LON1=1:GOTO 280
250 IF ANG1>87 THEN LON1=0
260 IF X$="V" THEN LON1=-1
270 IF ANG1<1 THEN LON1=0
280 IF X$="5" THEN IF FIR2<0 THEN FIR2=1
290 IF X$="F" THEN IF FIR1<0 THEN FIR1=1
300 GOSUB 680
310 IF HIT=0 THEN GOTO 70
320 LOCATE 2,22,0:PRINT " DO YOU WISH TO PLAY AGAIN (Y-N) ";
330 INPUT Q$:IF Q$="N" THEN CLS:END
340 HIT=0:MOV1=0:MOV2=0:LON1=0:LON2=0:FIR1=0:FIR2=0:ANG1=0:ANG2=0:GOTO 40
350 REM ***** DRAW SCREEN *****
360 LOCATE 1,1,0
370 VIEW(0,0)-(634,199),3,3
380 CLS
390 BFYL=(RND(1)*39)+150
400 PEAK=(RND(1)*80)+80
410 BFYR=(RND(1)*39)+150
420 LINE(0,BFYL)-(305,BFYL),2
430 LINE(305,BFYL)-(305,PEAK),2:LINE(305,PEAK)-(335,PEAK),2
440 LINE(335,PEAK)-(335,BFYR),2
450 LINE(335,BFYR)-(640,BFYR),2
460 PAINT(320,PEAK+5),2,2
470 PUT (TNK1,BFYL-11),A
480 PUT (TNK2,BFYR-11),A
490 COLOR 0,2
500 LOCATE 25,12,0:PRINT "ANGLE= ";
510 LOCATE 25,55,0:PRINT "ANGLE= ";
520 RETURN
530 REM ***** DRAW TANK *****
540 CLS
550 VIEW(0,0)-(300,90),3,3
560 FOR I=100 TO 120 STEP 8
570 FOR J=100 TO 160 STEP 10
580 READ SYMB,COLR
590 SYMBOL(J,I),CHR$(SYMB),5,1,COLR
600 NEXT J
610 NEXT I
620 GET (42,46)-(100,56),A
630 DATA 32,3,32,3,220,2,219,2,220,2,32,3,32,3
640 DATA 219,2,219,2,219,2,219,2,219,2,219,2,220,2
650 DATA 32,3,9,0,32,3,9,0,32,3,9,0,32,3
660 RETURN
670 ***** MOVE TANKS *****
680 IF MOV2=0 THEN GOTO 710
690 IF MOV2=1 THEN TNK2=TNK2+5 ELSE TNK2=TNK2-5
700 PUT(TNK2,BFYR-11),A
710 IF MOV1=0 THEN GOTO 740
720 IF MOV1=1 THEN TNK1=TNK1+5 ELSE TNK1=TNK1-5
730 PUT(TNK1,BFYL-11),A
740 IF LON2=0 THEN GOTO 760
750 IF LON2=1 THEN ANG2=ANG2+1 ELSE ANG2=ANG2-1

```



```

760 LOCATE 25,62,0:PRINT ANG2;
770 IF LON1=0 THEN GOTO 790
780 IF LON1=1 THEN ANG1=ANG1+1 ELSE ANG1=ANG1-1
790 LOCATE 25,19,0:PRINT ANG1;
800 ***** FIRE ROUNDS *****
810 IF FIR2=0 THEN GOTO 960
820 IF FIR2=1 THEN FIR2=-1:FX2=TNK2+26:FY2=BFYR-6:T2=0
830 IF ANG2>55 THEN TEMP2=55-(ANG2-55) ELSE TEMP2=ANG2
840 T2=T2+.5:VY2=(ANG2/88)*21:VX2=(TEMP2/55)*53
850 FX21=FX2-VX2:FY21=FY2-((VY2*T2)-((4.9)*(T2*T2)))
860 IF FX2>305 THEN GOTO 870
861 IF FY21<BFYL THEN GOTO 890
862 SLOPR=(FX2-FX21)/(FY2-FY21)
864 FX21=((BFYL-FY2)*SLOPR)+FX2:FY21=BFYL:FIR2=0
870 IF FX2<335 THEN GOTO 890
871 IF FY21<BFYR THEN GOTO 890
872 SLOPR=(FX2-FX21)/(FY2-FY21)
874 FX21=((BFYR-FY2)*SLOPR)+FX2:FY21=BFYR:FIR2=0
890 IF FX21>335 OR FX2<305 THEN GOTO 930
895 IF FY21<PEAK AND FY2<PEAK THEN GOTO 930
896 SLOPR=((FY2-FY21)/(FX2-FX21))
897 TEST2=((335-FX2)*SLOPR)+FY2:IF TEST2<PEAK THEN GOTO 930
900 FY21=TEST2:FX21=335:FIR2=0
930 LINE(FX2,FY2)-(FX21,FY21),4
940 FX2=FX21:FY2=FY21
950 IF FIR2=0 AND FX21>TNK1+6 AND FX21<TNK1+40 THEN HIT=1
960 IF FIR1=0 THEN GOTO 1110
970 IF FIR1=1 THEN FIR1=-1:FX1=TNK1+26:FY1=BFYL-6:T1=0

```

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980 IF ANG1>55 THEN TEMP1=55-(ANG1-55) ELSE TEMP1=ANG1
990 T1=T1+.5:VY1=(ANG1/88)*21:VX1=(TEMP1/55)*53
1000 FX11=FX1+VX1:FY11=FY1-((VY1*T1)-((4.9)*(T1*T1)))
1010 IF FX1>305 THEN GOTO 1020
1011 IF FY11<BFYL THEN GOTO 1040
1012 SLOPL=(FX1-FX11)/(FY1-FY11)
1014 FX11=((BFYL-FY1)*SLOPL)+FX1:FY11=BFYL:FIR1=0
1020 IF FX1<335 THEN GOTO 1040
1021 IF FY11<BFYR THEN GOTO 1040
1022 SLOPL=(FX1-FX11)/(FY1-FY11)
1024 FX11=((BFYR-FY1)*SLOPL)+FX1:FY11=BFYR:FIR1=0
1040 IF FX11<305 OR FX1>335 THEN GOTO 1080
1045 IF FY11<PEAK AND FY1<PEAK THEN GOTO 1080
1046 SLOPL=((FY1-FY11)/(FX1-FX11))
1047 TEST1=((305-FX1)*SLOPL)+FY1:IF TEST1<PEAK THEN GOTO 1080
1050 FY11=TEST1:FX11=305:FIR1=0
1080 LINE(FX1,FY1)-(FX11,FY11),4
1090 FX1=FX11:FY1=FY11
1100 IF FIR1=0 AND FX11>TNK2+6 AND FX11<TNK2+40 THEN HIT=2
1110 IF HIT=0 THEN GOTO 1190
1120 COLOR 4,7
1130 IF HIT=2 THEN GOTO 1170
1140 LOCATE 25,10,0:PRINT" **DIRECT HIT** ";
1150 LOCATE 25,55,0:PRINT" CONGRATULATIONS! ";
1160 GOTO 1190
1170 LOCATE 25,12,0:PRINT" CONGRATULATIONS! ";
1180 LOCATE 25,53,0:PRINT" **DIRECT HIT** ";
1190 RETURN

```

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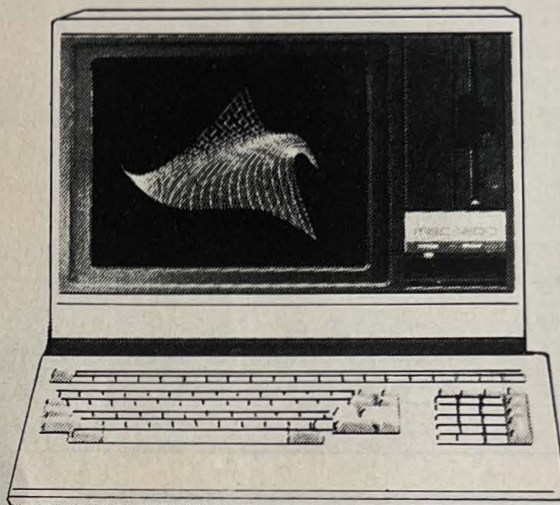
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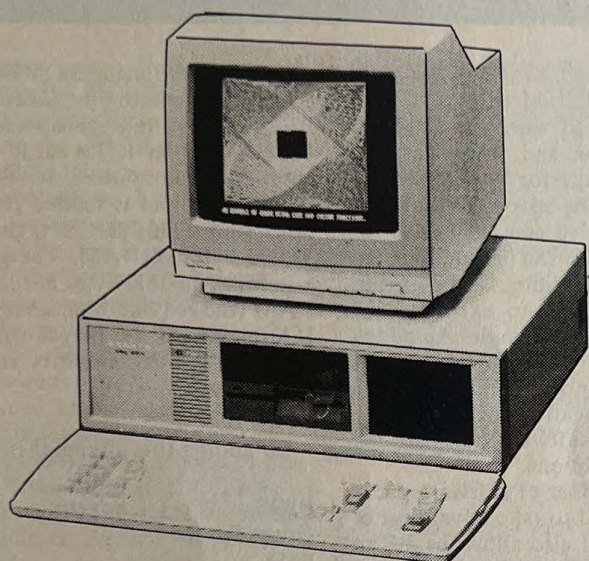
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INPUT OUTPUT

By Mark Zeiger

Q. Do you know of a routine that would equal the IBM BLOAD and BSAVE for my Sanyo MBC-550 (no video board)?

I am writing animated programs using BASIC and find the Sanyo SYMBOL command superior, but the lack of storing a full screen outside the program on a disk really bugs me. I have tried it with PEEK and POKE, but it takes over four minutes for one operation.

H.E. Kuentzel
Guelph, Ontario

A. The following is a poor man's version of the BLOAD command found in Sanyo BASIC for the MBC-555 series. I am using the random read to get the file byte by byte and poking it into the desired area of RAM. This routine may be inserted into any BASIC program (it was originally created to read assembly language routines that will be called by BASIC).

```
10 DEF SEG = xxxx ' PUT YOUR OWN LOCATION HERE
20 ON ERROR GOTO 120 ' CHECK FOR FILE NOT FOUND
30 OPEN "R", #1, "xxx", 1 'RANDOM RECORD OF 1 BYTE. PUT YOUR
    FILE NAME IN PLACE OF xxx

40 FIELD #1, 1 AS CODE$
50 SIZE = LOF(1)
60 FOR I = 1 TO SIZE
70     GET #1, I
80     POKE I-1, ASC(CODE$)
90 NEXT I
100 CLOSE #1
110 ON ERROR GOTO 0 'TURN OFF ERROR CHECKING
120 IF ERR = 53 THEN PRINT "xxx NOT FOUND"
```

Q. I am in need of a device to operate from an IBM compatible and to act as an in-circuit emulator for a Z-80. I understand there is a device called a "Baby Blue" which might do this job for me.

Do you know the manufacturer of this device or can you suggest a better one? The IBM compatible must act as a PROM in real time and not just analyze the circuit.

Ralph Spitzer
Vancouver, British Columbia

A. There is indeed a board that will allow you to run CP/M programs. The board was developed when the IBM PC first hit the market and there wasn't a great deal of software for PC-DOS.

However, with the advent of the NEC V-20, it is possible to run 8080 code (as well as "real mode" 80286 instructions) on IBM PCs and compatibles. The V-20 has a mode that allows it to execute 8080 instructions in real-time mode. An added benefit is that many 8086/8 instructions execute much faster on the V-20 than they do on the 8088. One drawback is that the V-20 will not run software that uses the unique Z-80 instructions.

There are a number of software packages that allow you to take advantage of the 8080 mode and also allow the PC to read various formats of CP/M 5.25-inch disks.

The NEC V-20 costs around \$15 to \$20. One software package I have tried with

A. If you are using an MBC-555 series computer, memory is taken up by the BIOS and by the green screen RAM. The BIOS is not in ROM as it is on IBM-compatible computers. It resides on the system disk and is loaded into RAM at boot time. This BIOS takes up about 37,000 bytes of RAM. The green screen also takes up 16K bytes at the top of user RAM (the red and blue screens also take 16K bytes each, but they are located at the top of physical memory at Location 0F000 Hex).

So adding this all together, we get:

| | | |
|--------------|--------|---------|
| BIOS | approx | 37,000 |
| Green Screen | | 16,384 |
| BASIC | | 46,976 |
| Total | approx | 100,360 |
| Total RAM | | 131,072 |
| Amount Used | | 100,360 |
| Amount Left | | 30,712 |

This is fairly close to what you stated you have. The difference might be in the BIOS versions we each are testing.

Q. I make extensive use of complex and lengthy batch files on my Sanyo MBC-555-2 (running under MS-DOS 2.11), and I have discovered a method for minimizing the time it takes such files to run.

If the batch file is put on the disk as the first file (or in the case of a system disk, right after COMMAND.COM), it appears to be easier for the operating system to find. This causes a dramatic reduction in track searching by the disk drive, which significantly reduces running time for the file (from two minutes two seconds to one minute 14 seconds for one of my often-used files) and reduces wear and tear on the disk drive.

success is RUNCPM by Micro Interfaces Corporation (305) 823-8088.

Q. I have a Sanyo MBC-555-2. When I type in BASIC the prompt tells me that I have 27,896 bytes free. When I attempt to run a program of more than that, I receive an "out of memory message." The directory lists the BASIC file as having 46,976 bytes and the COMMAND.COM file as 16,117. Where have the other bytes gone?

William D. Norbie
Ava, MO

I don't know why this works (I assume it has something to do with the file being listed near the beginning of the FAT); perhaps someone on your staff or one of your other readers could offer an explanation.

Actually, batch files don't have to be at the very beginning of the directory, just near the beginning. I have not determined the point at which the operating system has to start running the disk drive's heads back and forth to read the commands in the file, so I just put my batch files as near the beginning of the directory as possible (i.e., I put the batch files on the disk before any non-system files are recorded).

*Bill Haynes
Eugene, OR*

A. To minimize search time, it is not important where the file is located in the directory. What is important is where the file is located on the disk. If the directory entry is near the beginning of the directory, search time will be slightly shorter, but the chances are that you will not notice it unless you time it carefully.

However, if the actual file is located near the beginning of the disk, the heads do not have to move very far from the directory to find the program data. The time it takes to move the heads from the directory (located at the outer tracks of the disk) to the inner tracks of the disk can take up to one-quarter of a second (6 ms track-to-track times 40 tracks = .24 seconds). Therefore, files that are accessed frequently should be the first files placed on a disk.

Since disk space is allocated dynamically (data is placed anywhere there is free space and a single file may not necessarily be written to contiguous sectors), it is always a good idea to "unscatter" your disk if you are doing a lot of deleting and writing.

The best way to condense your files is to use the MS-DOS COPY command to copy the files to a blank disk. Copy the files you use most frequently first, then copy the other files (do not use the DISK COPY program as this makes a mirror image of the source disk). This way you can be sure that each file is written to consecutive sectors. You will usually find disk access times greatly improved once you perform this chore.

Q. *I have owned an MBC-555 for two years and rely on it daily in my law practice. Why do I occasionally get random blocks of character-sized reverse video in column one on WordStar? They don't seem to hurt anything, and I can even erase them if I want. But where'd they come from to begin with? Secondly, why isn't Sanyo's speaker accessible from*

DOS? BASIC has a "beep," but DOS has nothing. It would be nice to put an occasional "honk" or "chirp" into a batch file if you wanted to.

*Denis A. Kitchen, Jr.
Clarence, NY*

A. I have never seen the problem with the blocks of reverse video when running WordStar. You did not state whether you are using the Sanyo video board or not, so I really don't know where to begin to help you track your problem.

To get a beep from your computer, try this short program. You can easily assemble it using DEBUG's 'A' command. Execute DEBUG and type in the following at each prompt (the DEBUG prompt is a dash -):

<cr> means press ENTER

| DEBUG Prompt | You enter | | Notes |
|--------------|-----------|-------|-----------------------------|
| - | a100 | ENTER | |
| xxxx:0100 | MOV AH,6 | ENTER | xxxx will be different |
| xxxx:0102 | MOV DL,7 | ENTER | numbers for each computer |
| xxxx:0104 | INT 21 | ENTER | |
| xxxx:0106 | INT 20 | ENTER | |
| xxxx:0108 | ENTER | | to leave assembler |
| - | nBEEP.COM | ENTER | to name the file |
| - | rcx | ENTER | CX register holds file size |
| CX 0000 | | | |
| : | B | ENTER | file size |
| - | w | ENTER | to write file to disk |
| - | q | ENTER | leave DEBUG |

Running BEEP (from the MS-DOS prompt or from a batch file) will cause the speaker to sound.

Q. *I have a question that concerns the article in SOFTSECTOR, October '85 titled "Sanyo Power Supply Upgrade." This was a well-written article except that Sanyo has used two power supplies in the 550 series. The one in the article is the more common model PS-55A. The other, less common, which is in my 555-2, is the PS-54A. There are some marked differences in the 54A and the 55A.*

I would like to know if you have encountered this type of power supply and if you can give me some information on how to upgrade this type to the same configuration as the PS-55A in the article, as I'm sure I am not the only one to encounter this problem.

*Russ Blakeman
Rantoul, IL*

A. There are (at least) two power supplies for the MBC-555 series. One is the PS-54A and the other is the PS-55A. If a video board is installed, the power supply should be upgraded.

On the PS-54A make the following two changes:

- R2 change from 220 ohms to 100 ohms
- R4 change from 68 ohms to 91 ohms

On the PS-55A make the following two changes:

- R4 change from 2.4K ohms to 1K ohms
- R5 change from 68 ohms to 91 ohms

If you cannot find a 91-ohm resistor, you may use an 82-ohm resistor with satisfactory results.

Q. *I recently installed a Series 3 (minus extra memory) Video RAM Board and have had no success in getting a cable that works. I have DS/DD Teac drives, 256K, an RS-232 extra port, video board, Amdek 300A, a Panasonic CT-1300-D, MS-DOS 2.11, DS-DOS Plus 2.11 and MS-DOS 2.11 for use with the video board.*

When using my monochrome monitor, I boot fine. As far as I can tell, everything is OK.

Since I purchased a cable for my new panasonic RGB, I cannot get a boot at all from the video board. The color monitor boots fine on the original DIN 8-pin port.

I am sure the dealer sold me a Panasonic/IBM cable. I have even resoldered the pin arrangement to what appears correct to me — still no results. All I get is diagonal blue strips across the screen.

Will the Panasonic/IBM cable work? What is the pin arrangement of the video board 9-D female plug? And finally, could my problem be the software?

*Don Pennington
Baton Rouge, LA*

A. Here are the video pinouts for the normal Sanyo MBC-555 and the video board:

| Pin # | Regular Sanyo | Video RAM Board |
|-------|-----------------------|-----------------------|
| 1 | Red | Ground |
| 2 | Unused | Ground |
| 3 | Horizontal sync (neg) | Red |
| 4 | Ground | Green |
| 5 | Vertical sync (neg) | Blue |
| 6 | Unused | Intensity |
| 7 | Green | Unused |
| 8 | Blue | Horizontal sync (pos) |
| 9 | - | Vertical sync (pos) |

The regular Sanyo video connector is an 8-pin DIN connector while the video board connector is an IBM PC-compatible DB-9 connector. The Sanyo video does not support the intensity bit.





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After Max bids you goodbye, you'll wind up at the Delphi Main Menu; type in GROUP MSDOS and **join us on the MS-DOS SIG!**

Software review

ZBasic — A BASIC Compiler

BASIC is the most popular personal computer language. None of the others really come close in terms of number of users. BASIC does have a few problems, though. It is traditionally slow and definitely unstructured. I don't mind the unstructured part, but I do like speed. To obtain the speed I want, I have been using a BASIC compiler for almost everything I write for my own use.

The product reviewed here is a compiler. *ZBasic* is designed to be fast, easy to use and very transportable between MS-DOS machines. At \$89.95, *ZBasic* is price competitive with *QuickBasic* by Microsoft, which retails for \$99.

Let's take a little time here to discuss the difference between a compiler and an interpreter. Quite simply, an interpreter is a program which interprets the commands in the program file. It must decide what each command does and then instruct the machine to do it. That, of course, is the reason the interpreter is slow. It must handle each command as it comes up. A compiler, on the other hand, converts your program into machine code in a separate operation.

When you compile a program, the resulting file is either a .COM or an .EXE file. To run it, just type in the name from DOS. The type of file generated depends on the compiler used. Files include information from the compiler library as well as the program information, so the files are often quite large. This is not a real disadvantage, so don't worry about it.

A proper evaluation of a language implementation requires a comparison to other implementations of the same language. I wrote a few simple benchmarks to compare *ZBasic* to *QuickBasic* and the standard BASIC interpreter. I ran all timing tests on an MS-DOS machine running at the IBM standard 4.77 megahertz clock rate. They run somewhat slower on the 555 series computers. All times are in seconds to the nearest second.

| | BASIC | ZBasic | QuickBasic |
|--------------|-------|--------|------------|
| Eratosthenes | 1740 | 12 | 14 |
| Loop | 15 | 64 | 5 |
| CountB | 10 | 23 | 5 |
| Bench1 | 9 | 26 | 1 |

Obviously, with the benchmarks used, *QuickBasic* is the overall winner. Benchmarks don't necessarily tell all though. First, let's take a look at listings of the benchmarks used. The Eratosthenes' Sieve I used is a very common benchmark, and I took this version from the January, 1983 issue of *Byte* magazine. That seems to be the one everyone uses, and the article lists source code for several languages. The other three, I wrote myself for this evaluation.

All program listings are in BASIC. The only syntax change required to use them in *ZBasic* is the `TIME$` command. To set the time in *ZBasic*, change `TIME$="00:00:00"` to `TIME$=00,00,00`.

The problem with benchmarks is that they are sometimes misleading. Eratosthenes' Sieve, for example, calculates integers only. People who sell compilers love to use it. The reason is obvious: Compared to the BASIC interpreter, almost any compiler will run the sieve with "blinding" speed. The example here is a perfect case: almost a half hour in BASIC

and a few seconds when compiled. If you were to conclude from the comparison that the compiler will run your programs 145 times as fast as BASIC, you would soon have quite a surprise — that's why the other benchmarks.

Loop, for example, is a more "real world" test for most programmers. Loop performs a reasonable variety of floating-point math operations. Think about it. If you set out to write a program in BASIC, you will most likely use floating-point math. People don't balance checkbooks or plot the course of Halley's comet in integer math. It just isn't practical. Running Loop in floating-point mode, with *ZBasic* configured to the same accuracy as BASIC and *QuickBasic*, *ZBasic* is clearly the loser.

Please don't get the idea that I don't think Eratosthenes' Sieve is a valid benchmark. It definitely is. Just remember to compare apples to apples — or perhaps I should say Sanyos to Sanyos. The sieve is an excellent benchmark for comparing one computer to another or one compiler to another, but it isn't so valid when comparing a compiler to an interpreter.

CountB is just an open loop. Ordinarily, one will find the running time of an open loop more dependent on machine clock rate than on the language implementation used. *ZBasic* doesn't handle it so well. If *ZBasic* is configured to run integer only, it will zip through the open loop faster than summer lightning.

Bench1 is similar to Loop, but performs some trigonometric functions in the loop. Yes, I know that BASIC calculates in radians and I did nothing to convert to degrees. I just wanted the calculations, not the answers. Once again, *ZBasic* is a clear loser when it comes to execution time.

To try to get things on an even keel and give all the implementations a fair trial, I included a `PRINT` statement in Line 60 of Bench1, which prints out the last calculated cosine. BASIC reported a cosine of 0.6536208, and *QuickBasic* a value of 0.6536264. *ZBasic* reported a value of 0.6536 when configured for an accuracy of four places, 0.653621 at six places, and 0.65362068 at seven places. The first two took 26 seconds to run, and the last 27 seconds. Timing accuracy is only good to +/- one second, so there is really no difference.

For a better look at the situation, I ran Bench1 at double precision on all three implementations of the language. BASIC said the cosine was 0.653208391189575; *QuickBasic* said 0.6536264419555664, and *ZBasic* said 0.6536206776687526. The execution times were 10 seconds for BASIC, two seconds for *QuickBasic* and 41 seconds for *ZBasic*.

You will notice that the answers are all different. I have run the same thing on several computers, including an IBM mainframe, in several languages, without any agreement beyond the sixth or seventh place. No one is very interested in determining the true answer.

My concern here has been to give all three implementations of BASIC the best shot. I have tried single- and double-precision and I have tested all with the old standby, Eratosthenes' Sieve. *ZBasic* was a winner only when running the sieve.

There is much to love about *ZBasic*, but speed in dealing with floating-point math is not it. What may be it, for users of the Sanyo 555, is the fact that *ZBasic* is probably the most transportable language I have ever seen for an MS-DOS machine. You can write programs on an IBM and run them on a 555. That includes graphics, too.

ZBasic graphics run on everything I could get my hands on to test. *QuickBasic* won't do it, even the latest version of *Turbo PASCAL* won't. In fact, *QuickBasic* can be a little tricky to run on the Sanyo even without any graphics. Neither will run sound on the Sanyo. The Sanyo sound is implemented in an entirely different manner.

Another attractive item in *ZBasic* is its fantastic compilation speed. Believe me, it is fast. Another is its interactive capabilities and its built-in editor. It's almost as easy to use as BASIC.

Infomania — Making The Right Connection

Quick Basic, on the other hand, must first be compiled and then linked. The entire operation is fairly slow. Further, the executable file generated by *ZBasic* is significantly smaller than *Quick Basic*. The *ZBasic* documentation is great. I don't say that often, but it's true in this case. It is obviously well thought out and a real pleasure to use.

If you need good transportability between MS-DOS machines such as the 555 and the IBM or its clones, *ZBasic* may be just what you need. If you want high-speed number crunching, better not settle on *ZBasic*, even if your machine is a 555. Do make sure, though, that whatever compiler you select will do what you want on the 555. Time didn't allow me to test all functions using *Quick Basic*. I did check the *ZBasic* very thoroughly, though.

I was told by the people at Zedcor that the reason for the slow execution speed is the fact that all calculations are done in BCD to enhance the accuracy.

I'd say if you are using one of the new Sanyo computers (675, 775 or 885), pass up *ZBasic*. Microsoft BASIC has become the standard and *Quick Basic* is virtually identical to BASIC in its syntax. All you have to do is write the program, run it in BASIC, and when it's thoroughly debugged, compile and link it.

It's very hard to beat out the big guys and I'm afraid that even though they have an excellent idea, Zedcor hasn't quite done it.

Eratosthenes' Sieve

```
10 CLS
20 DEFINT A-Z
30 DIM FLAGS(8191)
40 TIMES$="00:00:00":PRINT TIMES:PRINT"10
ITERATIONS"
50 FOR M=1 TO 10
60 COUNT=0
70 FOR I=0 TO 8190
80 FLAGS(I)=1
90 NEXT I
100 FOR I=0 TO 8190
110 IF FLAGS(I)=0 THEN 190
120 PRIME=I+1
130 K=I+PRIME
140 WHILE K<=8190
150 FLAGS(K)=0
160 K=K+PRIME
170 WEND
180 COUNT=COUNT+1
190 NEXT I
200 NEXT M
210 PRINT COUNT,"PRIMES"
220 PRINT TIMES
230 END
```

Loop

```
10 CLS
20 TIMES$="00:00:00":PRINT TIMES
30 DIM X(10)
40 FOR J=0 TO 99
50 FOR I=1 TO 10
60 X(I)=LOG(I)
70 X(I)=X(I)^5
80 NEXT I:NEXT J
90 PRINT TIMES
100 FOR I=1 TO 10
110 PRINT X(I);
120 NEXT I
130 PRINT:PRINT TIMES
140 END
```

CountB

```
10 CLS
20 TIMES$="00:00:00":PRINT TIMES
30 FOR I=0 TO 9999
40 NEXT I
50 PRINT TIMES
60 END
```

Bench1

```
10 CLS
20 TIMES$="00:00:00":PRINT TIMES
30 FOR I=0 TO 359
40 X=COS(I)
50 NEXT I
60 PRINT X
70 PRINT TIMES
80 END
```

(Zedcor, Inc., 3438 N. Country Club Road, Tucson, AZ
85716; 602-881-8101, \$89.95)

— Jim Pile

Want to make a deposit at the bank? Want to sell pork bellies short? Or perhaps you would enjoy a relaxing evening learning about plastic products. Whatever your inclination — and there are many inclinations to choose from — the world of electronic services is available in this guide.

Elizabeth Ferrarini, a self-described "infomaniac," writer and teacher, has assembled an electronic services resource book called, not surprisingly, *Infomania*, published by Houghton Mifflin.

Infomania covers a wide range of information services: professional databases such as LEXIS and WESTLAW; shop-by-computer operations such as Comp-U-Store; full-service networks such as Delphi, The Source and CompuServe and many more. It includes everything from electronic mail to computer bulletin boards and X-rated systems. The introduction helps the novice understand the requirements and protocols of using terminal software and modems.

Almost every page has an interesting quote or anecdote relating to computers. For instance, "Women have seized control of technology," (Gloria Steinem, 1984), or perhaps suggestions on how to send a message to any of the planets in the solar system.

Ferrarini's approach takes what has normally been a very dry, laundry-list genre and made each part useful and interesting. Both the strong and weak points of each system are discussed, as well as cost information or an address where you can get it. She does not attempt to list every service available; rather, the strength of this book is its depth.

Ferrarini's philosophy is sound: "To use electronic services successfully, you don't have to *know* all the right information, you just have to know where to *find* all the right information."

(Houghton Mifflin Company, 2 Park Street, Boston, MA
02108; 800-225-3362, \$14.95)

— George M. Smart

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It Figures — A Sanyo Calc Sheet

If you've needed an easy way to solve your math problems, but a calculator was too limited and a spreadsheet too complex, *It Figures* is the answer. This new software program, with a version especially adapted for the Sanyo 555, can be described as a three-column by 20-line pre-formatted calculating worksheet. It can be used as a "what if?" scratch pad for just about any mathematical problem.

The program is aimed at the thousands of non-accounting applications for the worksheet environment that don't require hundreds of cells for information, or complex command structures for the user to learn.

You simply type your instructions (formula or variable value) on an ENTER line with an optional comment. Your entries appear, together with the calculation results, on a line of the worksheet. Easy line editing is available for typing corrections or changing values.

Because *It Figures* is a pre-formatted, line-numbered screen, you instantly see your equation and result, and you can print out the entire screen for your records. The worksheet can also be saved on disk for future loading back into memory. Making changes is as easy as typing in new formulas or values and watching the results change.

It Figures can be used with variables that are formulas or constants. These variables may be stored either with the worksheet in use, or as a "global" variable for use in any worksheet. The global feature is useful when designing "templates" (worksheets with pre-assigned variables and formulas) that require repetitive activities such as quoting products or services, or working with money rates. You can even chain worksheets together, keeping selected variables and results intact. *It Figures* will work with all 80-column printers. It's fast in operation and it comes with over 50 templates.

The math functions built into *It Figures* should satisfy all but the most scientific needs, and include: addition, subtraction, multiplication, division, integer, absolute value, fraction, negative value, random number, radian, degree, sine, inverse sine, cosine, inverse cosine, tangent, arctangent, cotangent, inverse cotangent, secant, inverse secant, cosecant, natural log, common log, antilog, square root, pi percent, factorial and scientific notation for numbers. Hyperbolic functions are not included.

Accuracy is 22-place floating point, with left-to-right

calculating hierarchy and essentially unlimited parentheses. A metric conversion file is included.

It Figures is written in ZBASIC, a product of Zedcor Corporation. This is one of the fastest compiled languages available, so speed is one thing the user will not need to be concerned about — even on the Sanyo!

The excellent, generously-illustrated manual describes the many features of *It Figures*. Complete entry-line and screen-line editing are supported, together with the use of 10 function keys. Free technical support is provided for registered users.

Over 50 templates (pre-configured with formulas and comments) are included on the program disk. They cover business, home and other applications. It's easy to generate and save your own templates, so the program really allows easy customization to your particular needs.

It takes a complete reading of the fine manual and about an hour to get familiar with *It Figures* and its many features. Built-in "Help" screens are available anytime. You can even branch out of *It Figures* to issue DOS commands and come right back to where you were in your worksheet. There are three different report formats, but no special printer drivers are required since only ASCII characters are used.

I practiced with *It Figures* by doing some simple estate planning. I designed two worksheets, chained together, to add all my assets with their current values. Updating is now a simple task, quickly yielding a new net worth with a printout for my records.

Then I decided to accept the challenge of a tougher task — making a worksheet to determine the distance and direction between any two points in the Northern Hemisphere. This involved spherical trigonometry.

I took the essential formulas from this program and entered them into *It Figures*. By merely entering the latitudes of the starting point and destination, and the shortest longitude difference between them (which is always less than 180 degrees), the program recalculates and displays all values, top-to-bottom, in a few seconds.

Because of some differences in the Sanyo 555 keyboard, and differences in screen and printer addressing, a special version called ITSANYO.EXE is included on the *It Figures* disk. This works fine on the Sanyo without a video board, but with a few compromises.

ITSANYO allows you to select colors for the background and the letters. I found I could only get three colors — green, cyan and black. With the Video RAM Board you could probably get all eight Sanyo colors. I chose ITSANYO's color code 120 (black letters on a cyan background) for my main screen, with color code 121 (cyan characters on a black background) for line numbers and key designations. This looked very good on a monochrome monitor as well.

ITSANYO is fast and smooth on the Sanyo, but some of the keys on the Sanyo keyboard are not marked the same as on an IBM PC keyboard. This leads to some confusion during worksheet editing. It turns out that END is '2' and HOME is 'I' on the Sanyo keypad. Also, since the Sanyo has a single INS/DEL key as opposed to separate keys on the IBM PC, the INSERT and DELETE functions are handled in a slightly different manner. The space bar is used together with INS/DEL for inserting characters.

It Figures is being produced in special "vertical market" versions for the small business, real estate, banking and securities/investment fields. These versions include templates designed especially for the needs of those particular applications.

(SimplSoft Products, Inc., P.O. Box 13173, Boulder, CO 80308; 800-468-4142, \$39.95 plus \$2 S/H)

— Fred Blechman

SANYO MBC 550/555 BEGINNER & INTERMEDIATE GUIDE by Fred Blechman

This 361-page CBS Computer Book, published by Holt, Rinehart & Winston, is sold with an SSDD diskette that has 56 programs from the book. A printed directory specifies the page(s) where each program on the disk is listed, described or explained. The book contains a complete course in Sanyo BASIC (including color and graphics), translations from other BASICs, MS-DOS primer, communications primer, hardware and software reviews and sources. Also included are ten complete home, personal use, hobby, and business programs.

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WildCard — Tools for File Maintenance and Software Development

When I read the introduction to *WildCard* from Prickly-Pear Software, I was impressed by the fact that the developers patterned this package after the UNIX operating system.

After some experimentation with the programs, what I found was a set of very useful, fast and productive file maintenance tools that complement the file handling already available in MS-DOS.

These tools are designed for use with text files, such as PASCAL and assembly language programs, but can be used with other files as well. *WildCard* will run on any MS-DOS computer with DOS 2.11 or higher and at least 64K of RAM.

WildCard consists of 10 individual programs, each with certain features to aid the programmer. First, there is a simple calculator program named, of course, CALC. The second program is a file combination program called CAT. This is short for concatenate, which is what the program does. That is, it combines files in order. It can also be used to create files, a la EDLIN.

There is one program in the set that just doesn't fit in, but was the one I found to be most useful. The DARKEM file causes your impact printer to double-strike over letters while printing, to create a bold appearance. This is very nice if you have no boldface feature on your printer. However, I have an ink jet and was only able to try it out on a friend's dot-matrix.

INCLUDE and MERGE are two other file combiners in the package. INCLUDE inserts a file into the midst of another file, while MERGE combines files alphabetically by line.

I found the INCLUDE file to be very useful in writing PASCAL code, but the MERGE program uses a great deal of disk space and is basically less useful. Both combining programs did work with reasonable speed and were simple to use.

A printing utility called PR is included as well. It is an improvement over the printing feature built into MS-DOS, allowing many options on how your output comes out. I used this program to catalog some of my machine language programs I needed a hard copy of, and was very pleased with the simplicity and versatility of the program.

Two files are included that are adaptations of existing utilities in MS-DOS. These are PAGE and RM. The PAGE command is an improvement on the "more" feature built into DOS, while the RM file is a more sophisticated DEL command. Both of the programs are best described as nice additions to existing software but not really necessary.

The last two utilities are by far the nicest of the package. These are the WC word counting program and the XREF word cross-referencing file. WC enables you to count characters, words and lines into a file simply and rapidly — a wonderful feature if you write lengthy code as I do.

The XREF utility creates a list of all the words in a given file. The list is alphabetical and can be used to correct spelling and syntax errors in program source code. It can also be used to reference variable names and keywords, a feature very useful in some languages.

In short, *WildCard* has some nice features and some very useful file management aids. The package has some weak spots, such as minor improvements in already useful DOS features, but overall is a good addition to the serious programmer's software collection.

(Prickly-Pear Software, 213 La Mirade, El Paso, TX 79932;
915-584-7784, \$39.95)

— Mark Sarisky

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PrintWorks — Print Formatting Made Easy

PrintWorks is an easy-to-use package of printer software that can add versatility to both your computer and printer. I ran the package on my Sanyo MBC-555 with a Video RAM Board and accessed my Olivetti PR2300 ink jet printer. I got identical results to those I received using an IBM PC and an Epson FX-80+. The package supports most IBM compatibles and over 30 printers, all nicely documented on the outside of the box. This is a great way to find out if the package will support your printer, *before* you buy it.

PrintWorks comes with a built-in demonstration file that gives the first-time user an idea of what it can do. What it can do is condensed, double-strike, emphasized, draft, graphics, overstrike, pica, elite, proportional, letter quality and special font printing. Subscripts and superscripts are a breeze.

PrintWorks allows scientific symbols that are customized for your system, variable spacing that is unlimited in possibilities and a host of features standard to most word processors. It also has a special pivot mode to print sideways (great for

banners and spreadsheets). All these features are menu driven and easy to access for the first-time user.

Most of the features are set up in files for each printer type that is supported by *PrintWorks*. Unfortunately, not all features are available on all printers. However, many of the "popular" printers have the capability to handle most of the *PrintWorks* features. They even make a laser version for those who own laser printers. My Olivetti was somewhat limited, but the Epson was fully supported.

I am a chemist by trade and the most appealing feature of this package was the font editor. This system allows the user, with a little practice and instruction from the manual, to create specialized sets of symbols for the printer to access. Most word processors don't have all the symbols that a scientist, like myself, needs, and this feature allows the user to add full sets of characters. The editor was fairly easy to use and produced excellent results.

There are two ways the system views special symbols: as a graphics font or as a downloaded font. The graphics font symbols are printed using the printer's graphics mode. *PrintWorks* inserts them while printing a disk file. Each line of the files is actually formed as a "picture" of the characters and is printed that way. The results look as if the graphics mode was never on and only standard text was printed.

The downloaded font system works on printers equipped to handle characters being loaded into the printer. The program can then send special control codes to call up these downloaded characters. No graphics mode is used and if this system will work on your printer (it didn't on mine), then this is the one to use. It is simply faster.

The pivot printing option was nice, also. I use a spreadsheet for some calculations and engineering work and now I can print it out sideways. This saves time and paper and just looks better than the standard printout. The *PrintWorks* package is compatible with many spreadsheets currently available, including *Lotus 1-2-3*.

The program comes with an easy-to-read manual that is very instructional and (ugh, dare I say it) user friendly. There is also a "Tips" file on the disks that gives advice to the user. In the back of the manual there is a trouble-shooting guide and a great index, both of which are very helpful.

Overall, I was impressed with the quality, versatility and simplicity of *PrintWorks*. If you need to upgrade your word processing capabilities, specialized character sets, or just like to have your printouts look a bit nicer, *PrintWorks* is a must.

(Softstyle, Inc., 7192 Kalaniana'ole Hwy., Suite 205,
Honolulu, HI 96825; 808-396-6368, \$69.95 plus \$3 S/H)

— Mark Sarisky

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FUTURESYSYSTEMS, Box 3040(X), Vista, CA 92083

Battle the clock as you try to evade evil robots in this challenging game

ROBOT ESCAPE

By James Lund

If you have ever wanted an action-packed game for your Sanyo, but you didn't feel like paying an arm and a leg for it, *Robot Escape* is for you. To play, you need: DOS 2.11, GW-BASIC and only 128K of memory.

First, load MS-DOS 2.11. At the A prompt type BASICA. After BASICA has loaded, type in the listing and save it. To save the program type SAVE "ROBOESC .BAS and press RETURN.

How To Play

After you have saved *Robot Escape*, type RUN and press RETURN. You will first see the opening screen for a few seconds.

You are Oly Fly (the happy face). After a long day at work, you come home and hear strange noises coming from next door. Being the investigative kind of a person you are, you go take a look. To your surprise you find that two of the new TX-1990 robots have gone mad.

Knowing there is nothing you can do, you must escape. There are two exits in the room (the bright white solid squares). To move, use the keys on the numeric keypad (remember to press the NUM LOCK key).

Keys To Use

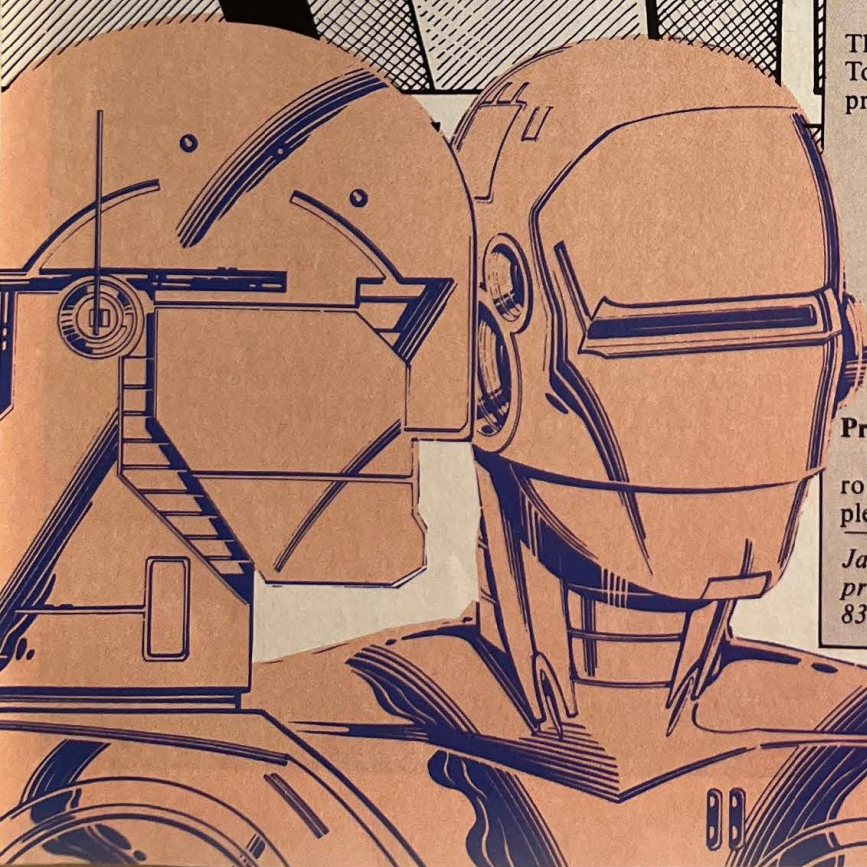
| | | |
|---------------|------|----------------|
| UP AND LEFT | UP | UP AND RIGHT |
| 7 | 8 | 9 |
| LEFT | | RIGHT |
| 4 | | 6 |
| DOWN AND LEFT | DOWN | DOWN AND RIGHT |
| 1 | 2 | 3 |

Programming Notes

If you are an experienced programmer, try to create another robot or even erase one of the robots. If there are any comments please contact me.

James Lund is a 14-year-old high school student and has been programming in BASIC for two years. He may be contacted at 8336 Crestshire Circle, Orangevale, CA 95662; (916) 725-8185.

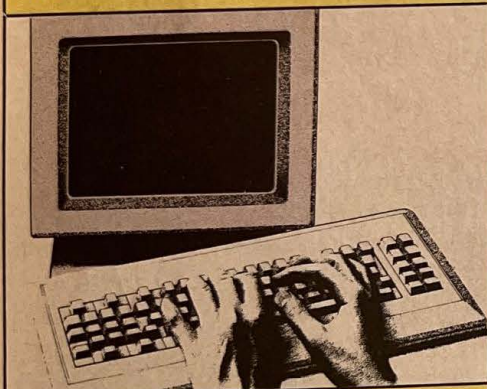
GW-BASIC



Submitting Material

Contributions to **SOFT SECTOR** are welcome from everyone. We like to run a variety of programs that are useful/helpful/fun for other Sanyo owners.

• **FORMAT:** Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material that is longer. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550, 555, 675, 775, 885 or 995 series. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capital letters; use upper- and lowercase. While it is a big help to us in typesetting to receive your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.



• **WHAT TO WRITE:** Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we prefer articles with accompanying programs that can be entered and run. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send a self-addressed, stamped envelope (SASE) to: Submissions Editor, **SOFT SECTOR**, The Falsoft Building, P.O. Box 385, Prospect, KY 40059. We will send you comprehensive guidelines.

Please do not submit programs or articles currently submitted to another publication.

The listing: ROBOESC.BAS

```

10 DEF SEG=0:KEY OFF:WIDTH 40:Z=0
20 SCREEN 0,1:LOCATE ,,0
30 CLS
40 LOCATE 10,10:PRINT"*****"
50 LOCATE 11,10:PRINT"*** ROBOT ESCAPE ***"
60 LOCATE 12,10:PRINT"*****"
70 LOCATE 14,12:PRINT"by James Lund"
80 LOCATE 15,15:PRINT"(c) 1985"
90 FOR Q=1 TO 2000:NEXT Q
100 CLS
110 READ S,HR,HC,RH,CH,F
120 COLOR 15
130 LOCATE 12,15:PRINT CHR$(176):LOCATE 12,23:PRINT CHR$(176)
140 COLOR 11
150 FOR X=1 TO 32
160 READ A,B,C
170 FOR Y=A TO B
180 IF X<=18 THEN LOCATE Y,C ELSE LOCATE C,Y
190 PRINT CHR$(219);
200 NEXT Y,X
210 H1=INT(RND*22)+1
220 H2=INT(RND*5)+1-34*(RND>.5)
230 COLOR 11:LOCATE 22,18:PRINT "TIME:"
240 COLOR 15:LOCATE 23,18
250 PRINT S;" ";
260 S=S-1:IF S=0 THEN 970
270 JS=INKEY$
280 IF JS="" THEN J=0:GOTO 310
290 J=ASC(JS)
300 POKE 1050,PEEK(1052)
310 RO=H1-(J=50 OR J=51 OR J=49)+(J=56 OR J=57 OR J=55)
320 CO=H2-(J=51 OR J=54 OR J=57)+(J=52 OR J=49 OR J=55)
330 RO=RO+(RO>22)-(RO<1)
340 CO=CO+(CO>40)-(CO<1)
350 SC=SCREEN(RO,CO,1) MOD 16
360 IF SC=11 THEN RO=H1:CO=H2:IF Z=0 THEN 440 ELSE 610
370 COLOR 0
380 LOCATE H1,H2:PRINT CHR$(2);
390 COLOR 4
400 LOCATE RO,CO:PRINT CHR$(2);
410 H1=RO
420 H2=CO
430 IF RO=12 AND (CO=15 OR CO=23) THEN 780
440 RA=HR-(RO>HR)+(RO<HR)
450 CA=HC-(CO>HC)+(CO<HC)
460 RA=RA-(RA>22)-(RA<1)
470 CA=CA-(CA>40)-(CA<1)
480 CC=SCREEN(RA,CA,1) MOD 16
490 IF CC<>11 AND CC<>15 THEN 540
500 D=2*INT(RND*2)-1
510 IF F THEN RA=HR+D:CA=HC ELSE CA=HC+D:RA=HR
520 F=NOT F
530 GOTO 460
540 COLOR 0
550 LOCATE HR,HC:PRINT CHR$(128);
560 COLOR 15
570 LOCATE RA,CA:PRINT CHR$(128);
580 HR=RA
590 HC=CA
600 IF CA=CO AND RA=RO THEN 880 ELSE Z=1
610 AR=RH-(RO>RH)+(RO<RH)
620 AC=CH-(CO>CH)+(CO<CH)
630 AR=AR-(AR>22)-(AR<1)

```



```

40 AC=AC-(AC>40)-(AC<1)
50 CB=SCREEN(AR,AC,1) MOD 16
60 IF CB<11 AND CB<15 THEN 710
70 D=2*INT(RND*2)-1
80 IF F THEN AR=RH+D:AC=CH ELSE AC=CH+D:AR=RH
90 F=NOT F
100 GOTO 630
110 COLOR 0
120 LOCATE RH,CH:PRINT CHR$(128);
130 COLOR 15
140 LOCATE AR,AC:PRINT CHR$(128);
150 RH=AR
160 CH=AC
170 IF AC=CO AND AR=RO THEN 880 ELSE Z=0:GOTO 240
180 CLS
190 COLOR 7
200 IF S>HS THEN HS=S
210 PRINT " GREAT, YOU MADE IT TO THE EXIT AND"
220 PRINT TAB(4)"LEFT THE BUILDING UNHARMED!!!"
230 PRINT TAB(12)"(THIS TIME)"
240 FOR T=1 TO 5:BEEP:NEXT T:FOR T=1 TO 2000:NEXT T
250 CLS
260 PRINT TAB(7)"YOUR SCORE IS";S;"!"
270 GOTO 930
280 CLS
290 COLOR 7
300 BEEP
310 PRINT " SORRY, THE ROBOTS CAUGHT UP WITH YOU,"
320 PRINT TAB(6)"AND HAD A GREAT DINNER!!!"
330 PRINT TAB(7)"THE HIGH SCORE IS";HS;CHR$(29);"."
340 PRINT TAB(3)"PRESS <RETURN> TO PLAY AGAIN.";
350 IF INKEY$<CHR$(13) THEN 950 ELSE RESTORE
360 GOTO 100
370 CLS:COLOR 7:BEEP
380 PRINT " SORRY, YOUR ENERGY HAS DIMINISHED!"
390 GOTO 930
400 DATA 500,11,15,11,23,0
410 DATA 3,9,4,11,20,4,6,7,8,9,14,8,16,17,8,9,10,12
420 DATA 12,14,12,9,10,18,12,14,18,9,10,20,12,14,20,9,10,27
430 DATA 12,14,27,6,7,31,9,14,31,16,17,31,3,9,35,11,20,35,5,6,3,8,31,3,33,34,3
440 DATA 9,18,6,20,30,6,13,17,9,21,26,9,13,17,14,21,26,14,9,18,17
450 DATA 20,30,17,4,5,20,7,31,20,33,34,20

```



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Captain Twilight's Secret Code Machine

By Fred Blechman



Hey, kids! Are you tired of your brother, sister, father, mother, cat, dog and everyone else reading your mail? You don't have a Captain Midnight Secret Decoder Ring? Quick, run to your Sanyo MBC-550/555 microcomputer and type in *Captain Twilight's Secret Code Machine* shown in Listing 1.

Even a Sanyo MBC-550 with a single-sided drive and only 128K will handle this program. You will need a printer, but just about any plain-vanilla printer that provides upper- and lowercase characters will do.

Encoding The Message

With the program in memory (don't forget to save it on disk if you typed it in!), make sure your printer is on and ready to print. Type RUN and press ENTER. The display will describe the program.

Now press ENTER and the screen shows a "menu" of choices. Since you want to generate a coded message, press 1 and ENTER.

Following the screen instructions, type in your message one line at a time in plain English. Ten lines is the limit, but that's easily changed as described later. You can use any normal (not graphics) keyboard characters, including upper- and lowercase letters and numbers, and almost all the punctuation and symbols. All the characters with an ASCII code of 32 to 122 inclusive are allowed.

ASCII codes 123 to 127 are available from the keyboard, in the regular (non-graphics) mode and should be avoided. These are the double-vertical symbol (on the top of the backslash key), the left and right curly-brackets (on the top of the square-bracket keys), and the tilde (on the top of the key just to the left of the ENTER key). These will give different results with different printers, so don't use them!

Don't make any line longer than a screen line, and press ENTER at the end of each line of text. After a short delay (while the computer is encoding that line), the next line number prompt will appear. When you want to end the text, just type an asterisk (*) as the first and *only* character on that line. If you don't end the text earlier, it will automatically end after 10 lines are entered.

Now the printer will do its thing. First it will print out your original text so you have a record of the message for yourself. Next the printer will skip three lines and then print out the entire message in a code I call "Reverse ASCII," suggested by my

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good friend and guru programmer, Marvin Mallon. It looks like gibberish made up of letters and symbols, but it is actually the ASCII code in reverse. More on that later.

Now you're prompted with "Another Copy (Y/N)?" Type Y (or any word beginning with either) and then press ENTER for another copy of the original and coded message. Typing anything else in answer to the prompt will return you to the menu.

Decoding The Message

Now send the coded message to your friend, who also must have a microcomputer (not necessarily a Sanyo), a printer and this program. Here's what he'll do to decode the message (and what *you'll* do

"Don't make any line longer than a screen line, and press ENTER at the end of each line of text."

when you receive a coded message from him): Load and run the program, using menu item 2, "Decode a Message."

Simply type the coded message into the computer one line at a time, using the normal (not graphics) keyboard. Follow the upper- and lowercase letters exactly, and don't confuse the lowercase letter l with the number 1. Since most of the coded letters are usually lowercase, leave the LOCK key off (not lighted).

Press ENTER at the end of each line and the printer will decode and print that line. Now do the next line. Use an asterisk as the first and only line entry to return to the menu.

The important thing to note here is that the coded message must be entered into the computer exactly as it appears in the message, including punctuation and case.

Menu item 3 allows you to print additional copies of the decoded message. Menu item 4 terminates the program.

The Secret Disclosed!

What is the "secret" of this program? The subroutine in lines 1000 to 1060 does it all. Line 1010 determines the number of characters in the line being encoded or decoded. Line 1020 sets up a FOR-NEXT loop to examine that number of characters, counting down.

Line 1030 determines the ASCII number of each character in turn, from right to left, and Line 1040 converts this value using a simple formula: 122 minus the ASCII value plus 32. Why? Since the largest value we want is 122, and the smallest is 32, this simple calculation inverts the high values to low values, and vice versa. It literally reverses the ASCII codes from top to bottom! Try some numbers and see for yourself.

Line 1050 builds a string of encoded characters one at a time as the loop progresses, with Line 1060 incrementing the loop and returning from the subroutine to the program line from which it was called.

This process encodes the original message, and is also used to decode the message, reversing the ASCII codes of the coded message back to their original uncoded values.

More Than Ten Lines

To use this program with more than 10 lines, you'll need to DIMension the arrays used and change the values in the FOR-NEXT loops in lines 450, 480, 490, 640 and 700. For example, for 25 lines you could add Line 150 this way:

```
150 DIM A$(25), B$(25)
```

Other Computers

You may want to translate this program to another computer that uses BASIC. The program is straightforward, and uses only two statements that might puzzle you, but are available with most recent versions of Microsoft BASIC.

LEN(A\$(X)) gives the number of characters in the array string A\$(X). Also, ASC(RIGHT\$(A\$(X),B)) gives the ASCII number of the character located three spaces from the right end of A\$(X). If your BASIC can perform these two functions, either directly or using subroutines, then the rest of the translation should be easy.

As for you "grown-ups," you can finally throw away your "10 cents and one boxtop" secret decoder ring from Jack Armstrong, the All-American Boy, or Tom Mix and his faithful horse, Tony, or from Captain Midnight, or wherever, and replace it with your \$1,000 microcomputer and \$400 printer. How's that for progress?

The listing: SECCODE.BAS

```

100 REM *****
110 REM *          Captain Twilight's Secret Code Machine          *
120 REM *          For the Sanyo MBC 550/555                      *
130 REM *          (C) Copyright Fred Blechman 1985                *
140 REM *****
200 CLS:PRINT:PRINT TAB(20)"CAPTAIN TWILIGHT'S SECRET CODE MACHINE"
210 PRINT:PRINT"          This program will generate up to 10 lines of secret code,
or decode a"
220 PRINT"message generated by this program."
230 PRINT:PRINT"          The messages can contain all letters and common punctuatio
n (ASCII values"
240 PRINT"from 32 to 122, inclusive)."
250 PRINT:PRINT"***** BE SURE PRINTER IS ON AND READY *****"
*****"
260 PRINT:INPUT"PRESS DOWN-LEFT ARROW KEY FOR MENU.....";A
300 CLS:PRINT:PRINT TAB(20)"CAPTAIN TWILIGHT'S SECRET CODE MACHINE"
310 PRINT:PRINT TAB(25)"(1) GENERATE A CODED MESSAGE"
320 PRINT:PRINT TAB(25)"(2) DECODE A MESSAGE"
330 PRINT:PRINT TAB(25)"(3) ANOTHER DECODED COPY"
340 PRINT:PRINT TAB(25)"(4) TERMINATE PROGRAM"
350 PRINT:PRINT:INPUT"SELECT 1, 2, 3 OR 4.....";S
360 IF S<1 OR S>4 THEN GOTO 350
370 ON S GOTO 400,600,700,800
400 CLS:PRINT:PRINT TAB(25)"TO GENERATE A CODED MESSAGE:"
410 PRINT:PRINT"          Type your message one line at a time, ending by pressing t
he down-left"
420 PRINT"arrow key. Limit the length of each line to the screen width. The mess
age"
430 PRINT"cannot exceed ten lines! To get a printout of both the original and co
ded"
440 PRINT"messages, use * as the only line entry....."
450 FOR X=1 TO 10
460 PRINT:B$(X)="" :PRINT"#";X:LINE INPUT A$(X):IF A$(X)="*" THEN GOTO 480
470 GOSUB 1000:NEXT X
480 LPRINT" ":LPRINT" ":LPRINT" ":FOR Y=1 TO 10:IF A$(Y)="*" THEN GOTO 490 ELSE
LPRINT A$(Y):NEXT Y
490 LPRINT" ":LPRINT" ":LPRINT" ":FOR Y=1 TO 10:IF A$(Y)="*" THEN GOTO 500 ELSE
LPRINT B$(Y):NEXT Y
500 PRINT:INPUT"ANOTHER COPY (Y/N)";R$
510 IF LEFT$(R$,1)="Y" OR LEFT$(R$,1)="y" THEN GOTO 480
520 GOTO 300
600 CLS:PRINT:PRINT TAB(25)"TO DECODE A MESSAGE:"
610 PRINT:PRINT"          Enter the coded message one line at a time. Each line will
be processed"
620 PRINT"and printed when you press the down-left arrow key."
630 PRINT:PRINT"          To return to the menu, use * as the only line entry....."
640 FOR X=1 TO 10
650 PRINT:B$(X)="" :LINE INPUT A$(X):IF A$(X)="*" THEN GOTO 300
660 GOSUB 1000:LPRINT B$(X)
670 NEXT X
680 GOTO 300
700 LPRINT" ":LPRINT" ":LPRINT" ":FOR Y=1 TO 10
710 IF A$(Y)="*" GOTO 300
720 PRINT:PRINT B$(Y):LPRINT B$(Y):NEXT Y
730 GOTO 300
800 PRINT:PRINT:PRINT"          Your mission, should you choose to accept it, is to..
..POOF!!!":END
1000 REM * CODE/DECODE SUBROUTINE *
1010 L=LEN(A$(X))
1020 FOR B=L TO 1 STEP -1
1030 C=ASC(RIGHT$(A$(X),B))
1040 C=122-C+32
1050 B$(X)=B$(X)+CHR$(C)
1060 NEXT B:RETURN

```




Hangman

Requires 256K

By Steven J. Ullrich

When I was a child, I played the word game "Hangman" on rainy days with my brothers. It was an interesting diversion then, and is still just as interesting.

The object is to guess the secret word before all of the body parts of the character are drawn. You get to guess which letters are used within the secret word, and only wrong guesses count against you.

Wrong guesses made while trying to discover the secret word will not count against you. If you have no idea what the secret word is, simply press RETURN.

The program is set up to choose words at random from data statements at the end of the listing. You can type in your own list of words in place of those in the data statements if you would rather; just be sure to separate each word with a comma.

Selection of the word is tied to the internal clock, so the list of words cannot exceed 60 unless you change the method of selection. Selection is limited to one appearance for each word also. You will not see the same word twice unless you restart the program.

The *Hangman* program was written on a 256K MBC-555 with Sanyo BASIC 1.32. The modest use of COLOR commands to highlight text will work with either a monochrome or a color monitor.

Steve Ullrich holds a bachelor's degree in industrial/technical education and teaches at Colby High School. He programs in BASIC as a hobby and may be contacted at 1750 Lynda, Colby, KS 67701; (913) 462-7939.

**If you don't have the skill to play this game,
be prepared to make the climb up Boot Hill**

The listing: HANGMAN.BAS

```

10 REM *****
20 REM *
30 REM * Steve Ullrich
40 REM * 1750 Lynda
50 REM * Colby, Kansas 67701
60 REM * (913) 462-7939
70 REM *
80 REM *****
90 REM
100 COLOR 6,1:CLS:LOCATE 12,1:LINE (100,21)-(500,60),3,BF:LINE (105,25)-(495,55)
,0,BF:SYMBOL (150,29), "HANGMAN!",5,3,5,0
110 PRINT TAB(25)"For the SANYO MBC-550 series":PRINT :PRINT TAB(30)"S. Ullrich
- 1986":PRINT:PRINT:PRINT
120 PRINT TAB(10) "USE CAPS LOCK FOR UPPERCASE ONLY! PRESS ANY KEY TO BEGIN! ";
130 CR$=INPUT$(1):PRINT :PRINT TAB(20)"LOOKING FOR A GOOD WORD, PLEASE WA
IT! ";:FOR DELAY=1 TO 500:NEXT DELAY:COLOR 2,0
140 DIM PROMPT$(26),LETTER$(26),USED$(26),USED(60):FINALE=0
150 CLS:LOCATE 3,5:LINE (312,0)-(632,189),5,BF:LINE (317,10)-(628,184),0,BF:SYMB
OL (373,1),"WELCOME TO BOOT HILL!",1,1,0,0:REM BIG WINDOW
160 LINE(6,0)-(302,35),5,BF:LINE(11,10)-(297,30),0,BF:LINE(6,38)-(302,74),5,BF:L
INE(11,48)-(297,69),0,BF:SYMBOL(32,1),"YOU HAVE USED THESE LETTERS:",1,1,0,0:SYM
BOL(32,39),"HERE IS YOUR WORD:",1,1,0,0:REM SMALL WINDOWS
170 LINE(6,80)-(302,189),5,BF:LINE(11,90)-(297,184),0,BF:SYMBOL(32,81),"BE SURE
THE CAPS LOCK IS ON!",1,1,0,0:REM INSTRUCTION/INPUT
180 REM ***** BEGIN GAME LOOP *****
190 IF FINALE=60 THEN GOTO 770
200 FOR I=1 TO 26:PROMPT$(I)=CHR$(45):NEXT I:MISSES=0
210 FOR I=1 TO 26:USED$(I)="":NEXT I:FOR I=1 TO 60:USED=0:NEXT I
220 RESTORE 870
230 WORD=VAL(RIGHT$(TIMES,2)):IF WORD=0 THEN WORD=60
240 IF USED(WORD)=WORD THEN WORD=WORD+1:GOTO 240
250 FOR I=1 TO WORD:READ ANSWER$:NEXT I
260 USED(WORD)=WORD:FINALE=FINALE+1
270 L=LEN(ANSWER$):FOR I=1 TO L:LETTER$(I)=MID$(ANSWER$,I,1):NEXT I
280 LINE (317,10)-(628,184),0,BF:REM CLEAR BOOT HILL WINDOW
290 LINE(11,10)-(297,30),0,BF:LINE(11,48)-(297,69),0,BF:REM CLEAR SMALL WINDOWS
300 LINE(11,90)-(297,184),0,BF:REM CLEAR THE INSTRUCTION/INPUT WINDOW
310 LINE (374,23)-(383,157),2,BF:LINE (383,32)-(495,38),2,BF:LINE (495,32)-(383,
23),6:REM SCAFFOLD
320 COLOR 2,0:LINE(11,90)-(297,184),0,BF:REM CLEAR LOWER SCREEN
330 LOCATE 3,5:FOR I=1 TO 26:IF USED$(I) <> "" THEN PRINT USED$(I); " ";
340 NEXT I
350 LOCATE 8,5:FOR I=1 TO L:PRINT PROMPT$(I);:NEXT I
360 LOCATE 13,5:PRINT "ENTER A LETTER: ";:LINE INPUT GUESS$:TRAP=0
370 IF GUESS$="" THEN GOTO 360
380 GUESS$=LEFT$(GUESS$,1)
390 FOR LETTER=1 TO 26:IF USED$(LETTER)="" THEN 420
400 IF GUESS$=USED$(LETTER) THEN COLOR 3,0:PRINT :PRINT TAB(5) "YOU ALREADY USED
THAT ONE!";:COLOR 2,0:FOR DELAY=1 TO 750:NEXT DELAY:GOTO 320
410 NEXT LETTER
420 USED$(LETTER)=GUESS$
430 FOR I=1 TO L:IF LETTER$(I)=GUESS$ THEN 460
440 NEXT I:IF TRAP=0 THEN 470
450 GOTO 480
460 PROMPT$(I)=GUESS$:TRAP=1:GOTO 440
470 MISSES=MISSES+1:GOTO 600
480 FOR I=1 TO L:IF PROMPT$(I)=CHR$(45) THEN 500
490 NEXT I:GOTO 590
500 LOCATE 8,5:FOR I=1 TO L:PRINT PROMPT$(I);:NEXT I:PRINT :PRINT
510 LOCATE 15,5:COLOR 5,0:PRINT "THAT IS ONE OF THEM! CAN YOU":PRINT TAB(5) "GU
ESS THE WORD? ";:LINE INPUT GUESS$:COLOR 2,0
520 IF GUESS$="" THEN GOTO 320
530 IF GUESS$=ANSWER$ THEN 550
540 PRINT :PRINT TAB(5) "SORRY, THAT IS NOT CORRECT.";:FOR I=1 TO 500:NEXT I:GOT
O 320
550 PRINT :PRINT TAB(5) "YOU GOT IT!"

```



```

560 PRINT :COLOR 5,0:PRINT TAB(5) "ANOTHER WORD? (Y)es or (N)o: ";:LINE INPUT A
NS$:IF ANS$="Y" THEN PRINT:PRINT TAB(5) "LOOKING FOR A NEW WORD.....";:FOR DELAY
=1 TO 500:NEXT DELAY:COLOR 2,0:GOTO 190
570 IF ANS$="N" THEN COLOR 2,0:CLS:END
580 LOCATE CSRLIN-2,5:GOTO 560
590 LOCATE 15,5:COLOR 5,0:PRINT "THAT'S ALL THE LETTERS!":PRINT TAB(5) "THE WORD
IS ";ANSWER$;"!":COLOR 2,0:GOTO 560
600 PRINT :PRINT TAB(5) "SORRY, THE LETTER ";CHR$(34);GUESS$;CHR$(34);" ISN'T":P
RINT TAB(5) "IN THE WORD. ";
610 FOR DELAY=1 TO 500:NEXT DELAY
620 REM
630 REM GRAPHICS ROUTINES FOR MISSED GUESSES!
640 REM
650 ON MISSES GOTO 670,680,690,700,710,720,730,740
660 REM
670 SYMBOL (462,68),CHR$(1),2,2,3,0:LINE (484,40)-(484,82),7:GOTO 320:REM HEAD
680 SYMBOL (459,85),CHR$(23),3,4,5,0:GOTO 320:REM BODY
690 SYMBOL (436,87),CHR$(213),2,2,3,0:SYMBOL (437,104),CHR$(248),2,2,5,0:GOTO 32
0:REM LEFT ARM
700 SYMBOL (489,80),CHR$(251),2,2,3,0:SYMBOL (495,75),CHR$(248),2,2,5,0:GOTO 320
:REM RIGHT ARM
710 SYMBOL (483,122),CHR$(62),2,3,3,0:GOTO 320:REM RIGHT LEG
720 SYMBOL (454,122),CHR$(62),2,3,3,0:GOTO 320:REM LEFT LEG
730 SYMBOL (453,143),CHR$(248),2,2,5,0:GOTO 320:REM LEFT FOOT
740 SYMBOL (478,143),CHR$(248),2,2,5,0:REM RIGHT FOOT
750 COLOR 5,0:PRINT "YOU LOSE!":PRINT :PRINT TAB(5) "THE WORD IS ";ANSWER$;"!"
760 COLOR 2,0:GOTO 560
770 LOCATE 15,1:COLOR 6,1:CLS:SYMBOL (175,30),"YOU HAVE USED ALL",2,2,6,0
780 SYMBOL (150,50),"THE WORDS IN MEMORY!",2,2,6,0
790 LOCATE 15,10:PRINT "WOULD YOU LIKE TO RESET THE PROGRAM? ENTER (Y)es or (N)
o: ";:LINE INPUT ANS$:IF LEFT$(ANS$,1)="Y" THEN RUN
800 IF LEFT$(ANS$,1)="N" THEN COLOR 2,0:CLS:END
810 GOTO 790
820 REM
830 REM CHANGE ANY OR ALL OF THE FOLLOWING WORDS, USE AS MANY LINES AS YOU
840 REM LIKE, BE SURE TO SEPERATE WORDS WITH A COMMA. 60 WORDS IS MAXIMUM.
850 REM BECAUSE SELECTION IS TIED TO THE INTERNAL CLOCK.
860 REM
870 DATA RIGHT,LEFT,LETTER,RESPONSE,VOWEL,ADJECTIVE,SANYO,PERSONAL,COMPUTER
880 DATA DELPHI,MODERN,BAUD,RATE,TERMINATOR,RADICAL,SUBROUTINE,BASIC,PROGRAM
890 DATA AUTOMOBILE,TELEPHONE,HELICOPTER,SUBMARINE,GASOLINE,AVIATION,DRAWING
900 DATA ABSTRACT,REALTY,TITLE,BUG,DEBUG,CHESS,SOFTWARE,OPERATOR,SPONSOR,PET
910 DATA JANUARY,SMOKE,BREATHING,CURTAIN,TRASH,SCHEDULE,TRADE,MAGAZINE,NOTE
920 DATA SPACE,ENTERPRISE,WEDNESDAY,HALLOWEEN,ADVANCED,PUBLICATION,FORCE,AIR
930 DATA BINDER,REFERENCE,SUBROUTINE,HOOT,BINARY,HEXIDECIMAL,TELEVISION,TIME

```

One Liner

PICK A NUMBER

In this program, the computer will pick a number between one and X (you choose X). Your job is simple: Guess the number the computer chooses in as few tries as possible. The computer will tell you to guess higher or lower, and will keep track of the number of guesses it takes you to find its number. Good luck!

```

1 CLS:INPUT "RANGE: 1-X INPUT X";X:N=IN
T(RND(1)*X+1):FOR F=1 TO 1000:INPUT "YOU
R GUESS";G:IF G<N THEN PRINT "HIGHER",,C
HR$(24);G:NEXT F ELSE IF G>N THEN PRINT
"LOWER",,CHR$(25);G:NEXT F ELSE IF G=N T
HEN PRINT "THAT'S RIGHT! IT TOOK YOU";F
;"GUESSES":END

```

Earl R. Borah
Silverton, OR

CORRECTION

I have recently become aware of a bug in my program *Othello* (SOFT SECTOR, June '86, Page 44), in regards to the replay option. Below is an example of the fix.

```

1020 WHILE 1=1
1030 ANS$=INKEY$
1040 IF ANS$="" THEN GOTO 1030
1050 IF ANS$="Y" THEN GOTO 1055 ELSE 106
0
1055 TEMPX=2:TEMPY=2:RESTORE
1056 P=0:OP=0:PLAYSCORE=0:OPPSCORE=0
1057 GOTO 140
1060 IF ANS$="N" THEN CLS:END
1062 WEND
1065 PLAYSCORE=P:OPPSCORE=OP

```

Please accept my apologies for this inconvenience.

Gary A. Besaw
Clarendon, VT



The Bird And The Bees

Requires 256K

By John Pasour

Computer games don't have to be terribly complicated to provide entertainment. This game is quite simple, both conceptually from a programming standpoint as well as operationally. Still, it is amusing and fun to play. For reasons which will soon become obvious, I call this little game *The Bird and the Bees*.

The object of the game is to catch as many bees as possible within the allotted time. The player can either use a joystick or the cursor keys to move a net around the playing area.

A bee moves randomly about the screen, staying in one place for awhile and then flitting off to a new spot. To catch this slippery little rascal, the net must be brought down over it. Otherwise, the bee will just flutter away from the net.

When the bee is caught, the net is repositioned to its starting point and a new bee appears. The captured bees are put in a "hive" to the left of the playing area. The time remaining is displayed as a bar on the left of the screen, and the score is displayed at the bottom.

Sounds simple so far, huh? Now let's introduce a few complications. First, there is the occasional appearance of a queen bee. You never know when or where she will appear or how long she will remain. However, if you can catch one of these brightly-colored bees, it's worth five points (as opposed to one point for the common bees).

The other major character in the game, as you may have guessed from the title, is a little bird which constantly flies overhead. Occasionally, and without warning, it does what birds are wont to do. Needless to say, it behooves you to stay out from under the bird whenever possible. If the unspeakable should happen while your net is beneath the foul fowl, you lose precious time while the net is cleaned under a running faucet.

On the other hand, if the bee suffers the indignity of being put upon, it is stunned and flutters to the ground. There, it lies dormant — easy pickings for you.

Be careful though: If you should nudge the bee without bringing the net down over it, it may spring back to life.

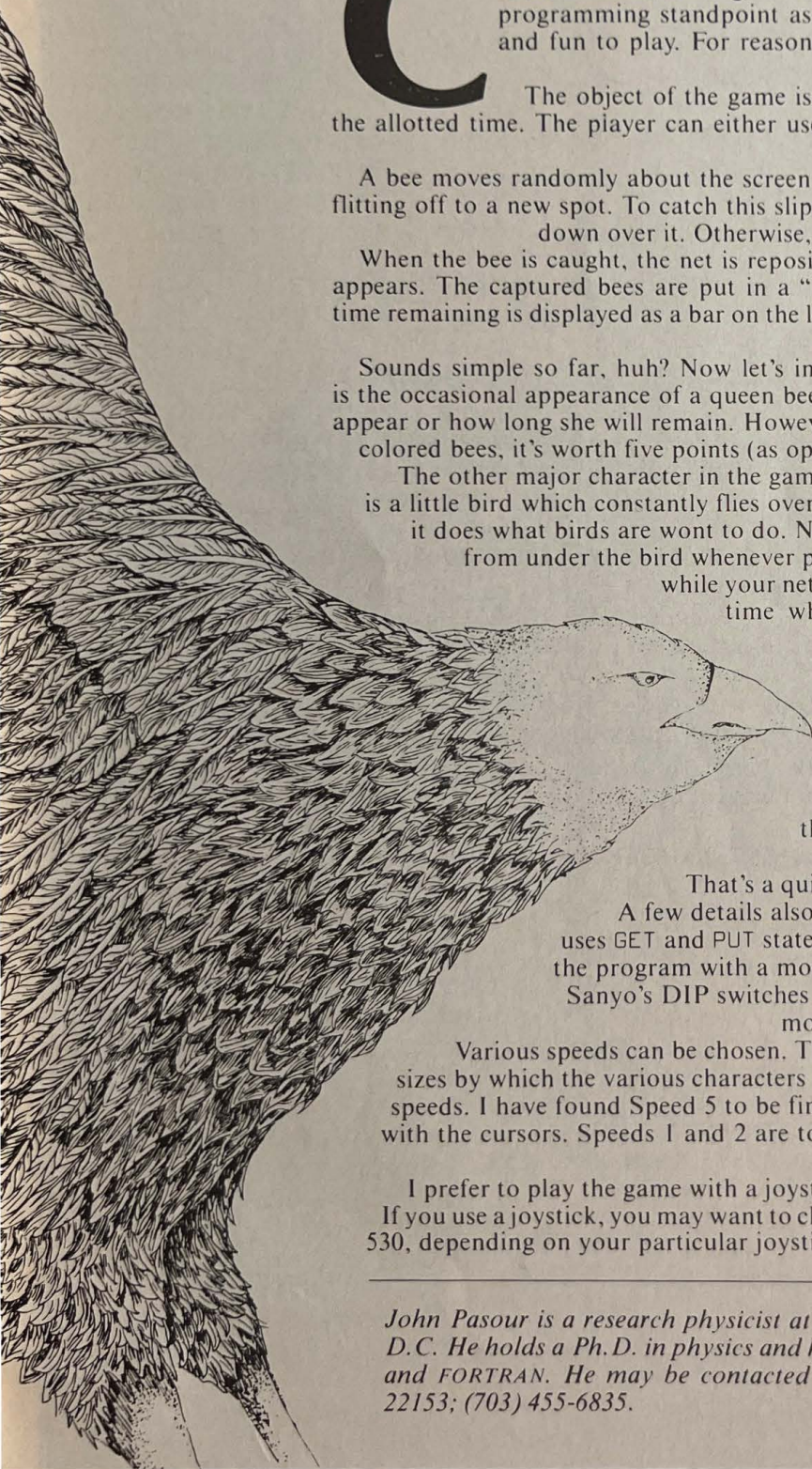
That's a quick rundown on the operation of the game.

A few details also need to be mentioned. First, the program uses GET and PUT statements, so you need 256K. Second, I wrote the program with a monochrome monitor in mind (of course, the Sanyo's DIP switches should be properly set). If you use a color monitor, you may want to change the colors.

Various speeds can be chosen. The speed is controlled by changing the step sizes by which the various characters move, so there is less fine control at higher speeds. I have found Speed 5 to be fine with a joystick, but 3 or 4 may be better with the cursors. Speeds 1 and 2 are too slow unless you run a compiled version of the code.

I prefer to play the game with a joystick, but it works fine with the cursor keys. If you use a joystick, you may want to change the STICK values in lines 500 through 530, depending on your particular joystick.

John Pasour is a research physicist at the Naval Research Lab in Washington, D.C. He holds a Ph.D. in physics and has written a variety of programs in BASIC and FORTRAN. He may be contacted at 8323 Lindside Way, Springfield, VA 22153; (703) 455-6835.



The values returned when the stick is in its neutral position can be found by typing PRINT STICK(1):PRINT STICK(2). My joystick, a CH Products Mach II, returns a neutral value of 85, so I have chosen

limits of 45 and 125 to initiate movement of the net.

The cursor mode is straightforward. Once the appropriate cursor key is pressed, the net continues moving in that

direction until another cursor key is pressed. All motion of the net can be halted by pressing the HOME (7) cursor key on the numeric keypad.

That should be all the information you need to get started. Pleasant hunting!

The listing: BB.BAS

```

10 ***** The Bird and the Bees *****
20 ***** by John Pasour *****
30 DIM BEE(40),QB(40),NET(45),BLBE(40),BLNT(45),PP(8),BLP(8)
40 DIM BRD(60),BLBRD(60),WT(5),BLWT(5)
50 HISCR=0: CLS
60 SYMBOL(50,30),"The Bird and the Bees",3,3: SYMBOL(25,80),"(Avoid the Bird and
   Catch the Bees)",2,2
70 FOR I=1 TO 3000: NEXT: CLS
80 GET(5,14)-(28,27),BLBE: GET(20,19)-(58,30),BLNT: GET(50,50)-(56,56),BLP
90 CIRCLE(53,53),3,,,5: PAINT(53,53),5: GET(50,50)-(56,56),PP
95 '   draw bee
100 CIRCLE(10,20),6,.15,.85,.1: CIRCLE(22,20),6,.65,.35,.1
110 CIRCLE(16,17),4,.5,1,2,1: CIRCLE(16,24),4,0,.5,2,1
120 LINE(14,16)-(14,25),1: LINE(18,16)-(18,25),1
130 PAINT(10,20),2,1: PAINT(22,20),2,1: PAINT(16,20),4,1
140 GET(5,14)-(28,27),BEE
150 PAINT(10,20),6,1: PAINT(22,20),6,1: PAINT(16,20),1,1: GET(5,14)-(28,27),QB
155 '   draw net
160 CLS: LINE(20,30)-(58,30),3: CIRCLE(46,30),12,.5,1,.9,3
170 PAINT(44,28),1,3: GET(20,19)-(58,30),NET: CLS: GET(67,37)-(114,48),BLBRD
175 '   draw bird
180 CIRCLE(100,40),6,.5,1,.5: CIRCLE(94,50),20,.58,.75,.5: CIRCLE(84,33),30,.125
   ,.36,.5: LINE(67,45)-(77,45),5: LINE(106,40)-(114,42),5: LINE(105,43)-(114,42),5
190 PAINT(100,40),5: PSET(103,39),0
200 GET(67,37)-(114,48),BRD
210 LINE(220,152)-(230,153),3,BF: GET(220,152)-(230,153),WT: GET(220,154)-(230,1
   55),BLWT
215 '   Initialize
220 CLS: LOCATE 10,20: PRINT "Will you use a joystick? ";: C$=INPUT$(1)
230 IF C$="Y" OR C$="y" THEN JS=1 ELSE JS=0
240 LOCATE 20,20: PRINT "Choose speed: 1 (slow) - 5 (fast)"
250 SPD$=INPUT$(1): SPD=VAL(SPD$): IF SPD<1 OR SPD>5 THEN PRINT "Speed out of al
   lowed range": FOR I=1 TO 2000: NEXT: GOTO 240
260 CLS: SCORE=0: SCR=0: SYMBOL(1,190),"Time Remaining",1,2,3,3
270 LOCATE 25,45: PRINT "High Score: ";HISCR;
280 LOCATE 25,65: PRINT "Speed: ";SPD;: SYMBOL(50,1),"BeeHive",2,1,3
290 LINE(25,199)-(30,0),4,BF: TIME=0: TTIM=0
300 LINE(40,0)-(199,199),6,B: LINE(200,0)-(639,180),,B
310 PUT(250,1),BRD: XBRD=250
320 XBT=RND(1)*390+210: YBT=RND(1)*140+20
330 LOCATE 25,30: PRINT "Score: ";SCORE;
340 PUT (XBT,YBT),BEE
350 XNET=201: YNET=160: PUT(201,160),NET
355 '   begin action
360 IJ=0: FOR I=1 TO 100*RND(1)/SPD: XN=XNET: YN=YN
370 PUT(XBRD,1),BLBRD: XBRD=XBRD+SPD*2: IF XBRD>575 THEN XBRD=250
380 PUT(XBRD,1),BRD
390 IF RND(1)<.05 THEN YP=15: BEEP: IP=1: XP=XBRD+10
400 IF IP=1 THEN 720
410 IF IQ=0 THEN IF RND(1)<.05 GOTO 920 ELSE GOTO 430
420 IQ=IQ-1: IF IQ<0 THEN IQ=0: PUT (XQ,YQ),BLBE
430 IF JS=0 THEN 800
440 IF STICK(1)<45 THEN XN=XNET-4*SPD: ' Joystick control
450 IF STICK(1)>125 THEN XN=XNET+4*SPD
460 IF STICK(2)<45 THEN YN=YN-2*SPD

```



```

470 IF STICK(2)>125 THEN YN=YNET+2*SPD
480 IF XN>594 THEN XN=594: ELSE IF XN<201 THEN XN=201
490 IF YN<12 THEN YN=12 ELSE IF YN>164 THEN YN=164
500 PUT(XNET,YNET),BLNT: PUT(XBT,YBT),BEE: IF IQ>0 THEN PUT(XQ,YQ),QB
510 PUT(XN,YN),NET
520 IF IQ>0 THEN IF XN>XQ-24 AND XN<XQ+3 AND YN>YQ-10 AND YN<YQ+5 THEN IF YN>YNE
T THEN SCR=SCR+1: PUT(XBT,YBT),BLBE: PUT(XQ,YQ),BLBE: PUT(XN,YN),BLNT: IQ=50: GOTO
690: ELSE XNET=XN:YNET=YN: PUT(XQ,YQ),BLBE: IQ=0: PUT(XN,YN),NET
530 IF XN>XBT-24 AND XN<XBT+3 AND YN>YBT-10 AND YN<YBT+5 THEN IF YN>YNET THEN SC
R=SCR+1: PUT(XBT,YBT),BLBE: PUT(XN,YN),BLNT: GOTO 690: ELSE XNET=XN:YNET=YN: GOTO
570
540 XNET=XN:YNET=YN: TIME=TIME+.3: IF IJ>0 THEN 430
550 IF TIME>1 THEN TIME=0: TTIM=TTIM+1: LINE (25,0)-(30,TTIM),0,BF: IF TTIM>198
GOTO 620
560 NEXT I
570 DX=(.5-RND(1))*150: XN=XBT+DX: IF XN<205 OR XN>600 THEN XN=XBT-DX
580 DY=(.5-RND(1))*70: YN=YBT+DY: IF YN<20 OR YN>162 THEN YN=YBT-DY
590 PUT(XBT,YBT),BLBE: PUT(XNET,YNET),NET
600 PUT(XN,YN),BEE: XBT=XN:YBT=YN
610 GOTO 360
620 LOCATE 10,30: PRINT "GAME OVER";
630 IF SCORE>HISCR THEN HISCR=SCORE: LOCATE 12,27: PRINT "CONGRATULATIONS--New H
igh Score: ";HISCR;
640 LOCATE 20,30: PRINT "Do you want to play again?";
650 C$=INPUT$(1)
660 IF C$="N" OR C$="n" THEN CLS: STOP
670 IF C$="Y" OR C$="y" THEN 220
680 GOTO 650
685 ' increment score and put bee in hive
690 SCY=INT((SCR-1)/5): SCX=SCR-SCY*5: IF JS=0 THEN DXN=0: DYN=0
700 IF IQ=50 THEN PUT(20+29*SCX,185-16*SCY),QB: SCORE=SCORE+5: IQ=0: GOTO 320
710 PUT(20+29*SCX,185-16*SCY),BEE: SCORE=SCORE+1: IF IQ>0 THEN PUT(XQ,YQ),BLBE: IQ
=0: GOTO 320: ELSE GOTO 320
715 ' check for hit by bird
720 WHILE YP<160: PUT(XP,YP),BLP: YP=YP+10: PUT (XP,YP),PP: WEND: IP=0
730 LET PN=XP>XNET AND XP<XNET+37: LET PB=XP>XBT-5 AND XP<XBT+23
740 IF PN AND NOT PB THEN BEEP: PUT(XNET,YNET),BLNT: PUT(XBT,YBT),BLBE: PUT(XP,YP
),BLP: GOSUB 860: GOTO 320
750 IF PB AND NOT PN THEN BEEP: PUT(XP,YP),BLP: IJ=1: GOSUB 780: IF IQ>0 THEN IQ
=0: PUT (XQ,YQ),BLBE: GOTO 430: ELSE GOTO 430
760 IF PB AND PN THEN BEEP: BEEP: PUT(XNET,YNET),BLNT: PUT(XP,YP),BLP: IJ=1: GOSU
B 780: GOSUB 860: XNET=201:YNET=160:XN=201:YN=160: IF IQ>0 THEN IQ=0: PUT (XQ,YQ),
BLBE: GOTO 430: ELSE GOTO 430
770 PUT(XP,YP),BLP: GOTO 430
780 WHILE YBT<160: PUT(XBT,YBT),BLBE: XBT=XBT+5*(-1)^IJ: YBT=YBT+5: IJ=IJ+1: PUT
(XBT,YBT),BEE: WEND
790 RETURN
795 ' cursor control
800 X$=INKEY$: IF X$="" THEN 850
810 IF X$=CHR$(28) THEN DXN=-4*SPD:DYN=0
820 IF X$=CHR$(29) THEN DXN=4*SPD:DYN=0
830 IF X$=CHR$(30) THEN DYN=-2*SPD:DXN=0
840 IF X$=CHR$(31) THEN DYN=2*SPD:DXN=0: ELSE IF X$=CHR$(12) THEN DXN=0:DYN=0
850 XN=XN+DXN: YN=YN+DYN: GOTO 480
855 ' wash net
860 LINE(201,141)-(230,145),4,BF: LINE(220,145)-(230,150),4,BF: FOR J=1 TO 10
870 FOR YW=152 TO 176 STEP 3: PUT(220,YW-1),BLWT
880 PUT(220,YW),WT: NEXT YW: PUT(201,160),NET
890 FOR YW=153 TO 177 STEP 3: PUT(220,YW-1),BLWT
900 PUT(220,YW),WT: NEXT YW: NEXT J
910 TTIM=TTIM+5: LINE(201,141)-(230,179),0,BF: RETURN
915 ' place queen bee
920 IQ=100*RND(1)/SPD: XQ=XBRD-30: IF YBT>100 THEN YQ=YBT/2 ELSE YQ=YBT+60
930 PUT(XQ,YQ),QB: GOTO 430

```


Delphi Bureau

*By Kevin Nickols
MS-DOS SIG Manager*

The MS-DOS SIG Database: File Storage

This month we're going to begin an examination of the MS-DOS SIG database. In the database you will find help files for many of the common operations in the SIG, the programs featured each month in *SOFT SECTOR*, and in particular, the great public domain and "user-supported" programs — probably the most important area of the SIG. It is likely where you will find yourself spending most of your online time.

A good place to begin would seem to be with a problem that often causes a little confusion for new members: the manner in which most of the files are stored in the database. It sometimes happens that a new member will successfully download a program for the first time, only to find that it doesn't run properly — in fact, it doesn't run at all. This is because the files have been stored in a compressed, archived format. Although it is not necessary to store the files this way, and may be a little confusing at first encounter, it is done with good reason. Archiving the files allow us to place several files into a single one, simplifying the downloading procedure because all the related files are brought down in a bundle. By the same token, compressing the files reduces their size by as much as 50 percent, greatly decreasing the amount of time it takes to download them and the associated online charges.

Any time a download is initiated, the system will display what the file should be named on the receiving end. When the filename is identified with an .ARC extension, that file is an archive and must be "dearchived" before it can be used.

Although there are several archive and compression utilities in wide use on bulletin boards and information services, the one used exclusively on the MS-DOS SIG is *ARC*, a user-supported program by System Enhancement Associates of Wayne, N.J. As with all user-supported software, they distribute the program freely, but request that those who use and enjoy the program send them a nominal fee.

ARC has several advantages over the other compression utilities, primarily because it handles both the compression and archiving (all in one step), and it uses several different compression methods, analyzing each file and using the method that will yield the greatest compression. It is available for downloading in the "Utilities" topic of the SIG database, and should be the very first file downloaded by new members. It will then be used to dearchive all future downloads.

In its original form the utility is a single file, *ARC51.COM* (Version 5.1 of the program, the latest to date). After it has been downloaded, it is executed by typing *ARC51*. It will begin to break itself apart, dearchiving and decompressing itself into three different files: *ARC.EXE*, *ARC.DOC* and *ARC.TXT*.

ARC.EXE is the program itself and the other two are documentation files that may be printed out for future use.

The documentation explains all the facets of using the *ARC* program, but it is a simple matter to get it running without wading through them all. By typing *ARC* on the DOS command line, with no parameters after it, all the commands and syntax will be displayed. Although you will see that there are several commands supported by the utility to perform different functions, the two primary commands are *A*, for Add, and *E* for Extract.

Let's say we have just downloaded a file named *PROGRAM.ARC*. The .ARC extension tips us that it is an archived file that needs to be dearchived before it can be run. To dearchive the file, we use the *E* command.

On a two-drive system, put *ARC.EXE* and *PROGRAM.ARC* on a disk in Drive A, and an empty, freshly formatted disk in Drive B. Then use the Extract command by typing:

```
ARC E PROGRAM B:*.*
```

This will break all of the files out of the archive *PROGRAM.ARC*, decompress them and move them to Drive B. Although the entire operation may be done on a single disk, or one partially filled with other files, it is best to route the files to an empty disk. Large amounts of disk space are routinely used in the dearchiving process. Of course, on a hard disk this is generally not a problem.

By the same token, if you have programs to share with others in the MS-DOS SIG, you should use the *A* command of the *ARC* utility to archive them before uploading them to the database. It will save you time uploading them, as well as lots of time for the members who download them.

Have *ARC.EXE* on a disk in Drive A and your program with its documentation and any other related files in Drive B. Then type:

```
ARC A B:filename *.*
```

This will compress and archive all the files in Drive B and store the resulting file on the disk in A, automatically adding the .ARC extension. The file is then ready to upload.

As you use the *ARC* utility and become familiar with it, you will discover many uses for it other than its obvious use in telecommunications. It's a great little storage space saver for making backups of your important files. And it's just one of the many valuable files available in the MS-DOS SIG's database.

BUSINESS Sector



CHARLOTTE & BRIAN STONE
Soft Sector Contributing Editors

Q. Thanks for printing my letter in *SOFT SECTOR* (May '86). Enclosed is a floppy disk containing a sample letter and data file. If you run them through MailMerge I believe you will experience the problem that I have been having with "page creep."

Douglas S. White
Reston, VA

A. In reply to your second letter and the sample files you sent on disk: The reason you were having trouble with page creep when using *MailMerge* was because you had carriage returns past the end of the page marker. This was interpreted by *WordStar* and *MailMerge* to print each of the carriage returns as a blank line. Once I removed them, the file printed exactly as you wanted. I have fixed the file on your disk and also included a copy of your original file named "oldfile." If you will look at the end of each file, you will be able to see the differences between them.

Q. I have a Sanyo MBC-550 with a double-disk drive and have installed a Video RAM Board. I use *Easy Writer I*, but cannot get it to load while in the new configuration. Is there anything that can be done with the program so that it can be used without switching back to the original configuration? I would also like to be able to use *EasyWriter* at work on an IBM PC. What can be done, if anything?

One bit of information I would like to pass on: With a Video RAM Board installed while using Lotus 1-2-3, you can get a screen print by pressing the SHIFT, CONTROL and the DEL keys at the same time.

Gene Beiermann
Norfolk, NE

A. There is no advantage to using the Video RAM Board with *EasyWriter I*.

The thing to do is use your original DOS and everything will work fine. Your original DOS will just not access the new RAM Board. The only other thing you may have to do is switch the cable from your monitor.

I have never seen a patch for *EasyWriter I* that will allow it to function on the IBM PC, (this is probably a protection scheme from IUS so the software will only run on the Sanyo).

Q. In September 1985, I wrote you about the problems I was having trying to use *CalcStar* on a 640K IBM PC XT. You answered me by indicating that you knew of no solution.

You published my letter in your column and I received a phone call from Larry Stanley in Atlanta who recommended using a RAM disk with no more than 512K. (Could you commend a fellow PC user who would take the time and trouble to call someone across the U.S. to try to help?) [You bet we could!!]

Before I could try his suggestion, I read in *Personal Computing* (April '86) how to solve this problem with *WINSTALL.COM*. It works, and I wrote to *MicroPro* who sent the enclosed sheet. The suggested change does solve my *CalcStar* program and I can now use it. Maybe someone else would find this useful if they are not already aware of it.

Alma Greenwood
Tumwater, WA

A. Thank you very much for sending the information that you received from *MicroPro* regarding their software in machines with more than 512K of RAM.

It's people such as yourself that make it possible for us to be able to make "Business Sector" the information exchange that it is. It is not possible for Char and myself to read (or even get) all of the magazines, journals and documentation

that are available, even for just the Sanyo computers.

Here is the information Alma sent us. We're grateful to her for letting us present this to all of you.

When you receive the message "too little memory" when running *MicroPro* software with 640K RAM, follow these steps on a backup copy of your program.

WINSTALL, RINSTALL or DINSTALL

With *DEBUG.COM* in Drive A and *WINSTALL.COM*, *RINSTALL.COM* or *DINSTALL.COM* in Drive B, enter the following.

```
A>DEBUG B:WINSTALL.COM
ENTER
-E2D4 ENTER
72 ENTER
-W ENTER
-Q ENTER
```

At this point you will be back to the operating system ready to run the installation.

CalcStar

Same type procedure with *DEBUG.COM* in Drive A and *CS.COM* in Drive B.

```
A>DEBUG B:CS.COM ENTER
-F100 L4 E8 4D 07 90 ENTER
-F850 L4 B8 80 00 A3 ENTER
-F854 L4 03 00 8C C8 ENTER
-F858 L3 8E D0 C3 ENTER
-W ENTER
-Q ENTER
```

CSDump

```
A>DEBUG B:CSDUMP.COM ENTER
-F100 L4 E8 3D 06 90 ENTER
-F740 L4 B8 50 00 A3 ENTER
```



```
-F744 L4 03 00 BC C8 ENTER
-F748 L3 BE D0 C3 ENTER
-W ENTER
-Q ENTER
```

Again, you will be back to the operating system ready to run *CalcStar*.

StarIndex

```
A>DEBUG B:STARINDX.COM
ENTER
-E375 ENTER
72 ENTER
-E12A ENTER
73 ENTER
-W ENTER
-Q ENTER
```

Style Section of StarIndex

```
A>DEBUG B:STYLE.COM ENTER
-F100 L3 E9 7D 03 ENTER
-F480 L4 BB 80 00 A3 ENTER
-F484 L5 03 00 E9 7A FC ENTER
-W ENTER
-Q ENTER
```

This will not work with *FormSort*. Version 1.4 will only run on a DOS machine with less than 512K of RAM.

FormSort 1.6 will sort files on machines with 512K or more. According to MicroPro's Tech Note WS-27, dated November 1984, call the MicroPro Customer Update department at (800) 227-5609 to update to Version 1.6. We are not sure if this information is still correct.

Thanks again to Alma Greenwood.

Q. *I have been very busy for several months, translating high-quality American software into German. I have learned much and gained quite a bit of experience, especially with those in assembler. I needed a color monitor for programs like Picasso and I am enjoying working with WordStar in color. I wanted to install CalcStar in color too, but I realized that on my disk the CSCOLOR is missing. Where can I get this BASIC program? Is there any version of DataStar on color? This would help a lot too.*

I have used WizStar with WordStar and it works really great. I tried it with the German version of WordStar but WizStar rejects it, stating that it is not a WS-COM file. Is there any way to manage using WizStar with that version of WordStar?

Wolfgang Otto Pregitzer
Portugal

A. The versions of the MicroPro software that are furnished with the MBC-550 series only came with WSCOLOR.BAS. I am not aware of any of the systems coming with any of the other COLOR.BAS programs.

Not really being a programmer myself, I do not know how to change the *CalcStar* and *InfoStar* programs to take advantage of a color display. Possibly one of our readers has the necessary information and could send it to me or write an article for publication on changing the screen colors.

The most likely reason that *WizStar* will not work with the German version of *WordStar* is because the foreign language versions of the MicroPro software are quite different from the American version for which *WizStar* was written. Possibly the author of *WizStar* would be willing to try his hand at a copy of your *WordStar* (German version), to try to make it work. If you would like to send me a copy, I will forward it to him.

Q. *Please help me custom install an Olivetti PR2300 graphics printer for WordStar, EasyWriter and such.*

Leon C. Renfield
Custer, MI

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A. I am sorry to inform you that there are too many incompatibilities with the Olivetti PR2300 to allow it to function correctly with the Sanyo MBC-550 series and *WordStar*.

The printer automatically outputs a line feed with every carriage return which cannot be eliminated. This alone will always prevent *WordStar* from doing underlining, double printing and any function which *WordStar* prints with a second pass on a line. You will have to be satisfied with standard single pass printing as long as you use this printer, because there is no way to turn off the line feed that the printer outputs.

Yes, the printer is capable of doing these functions, but not with *WordStar*. This information has been printed in *SOFT SECTOR* before and still holds true. I do not know any way around this.

Q. How does one use *WordStar* to create a BASIC program? The advantage of using *WordStar* rather than typing the program with BASIC loaded into RAM is *WordStar's* superior editing features.

I think it was you who said in one of your columns that *CalcStar* was memory resident, and wouldn't be sped up as a RAM disk program. I find that on my 555-2 with 256K, that sometimes the GOTO command causes a disk access. How can this be if the program is memory resident?

If I use the LOCATE 24,80 or LOCATE 25,79 commands, the display scrolls up one row. If I use the LOCATE 25,80 command, it scrolls up two lines. Why?

R. Kostanty
Wood-Ridge, NJ

A. To create BASIC programs, AUTO EXEC.BAT files and the like, you should use *WordStar's* 'N' NonDocument mode rather than the 'D' Document mode. The big difference is that the 'N' mode will not try to justify the text. Justification can cause problems in BASIC because *WordStar* inserts space compression and expansion characters using the eighth data bit not normally used. This will usually not happen as long as "wordwrap" does not take place; i.e., the line is less characters in length than the margin at the top of the screen.

You are correct, the program *CalcStar* is not completely memory resident as was mentioned in another column in *SOFT SECTOR*, and can be sped up by using it with a RAM disk program. However, while you are working with a spreadsheet, all of the data is memory resident which can cause limitations in the size of your spreadsheets due to the amount of memory available.

Regarding the use of the LOCATE command: I think your confusion comes from not quite being aware of how the screen is numbered. The top left corner is 0,0 and the bottom right is 24,79. There are 25 lines (rows) and 80 columns on the screen but they always start with 0. As a result, if you ask for 1,5 you will be referring to the second line (row) and the fifth character position (column). The last character position on the screen is 24,79. This is why you are getting scrolling by asking for 25,80. This is actually two lines past the visible screen and will cause two lines to scroll up; 25 would actually be the 26th line and 80 would be the first character of the next line. Plus, you will find that there is always a blank line at the bottom of the screen. The cursor never resides on the last line of the screen.

[Mr. Kostanty also asked a question about BASIC programming. He wanted to know how to have a BASIC program save arrays of data on a separate disk from the program without resaving the whole program. Such programming questions are beyond the scope of "Business Sector," but if any readers can help him or refer him to a source for an answer, please write a letter to the editor of *SOFT SECTOR*.]

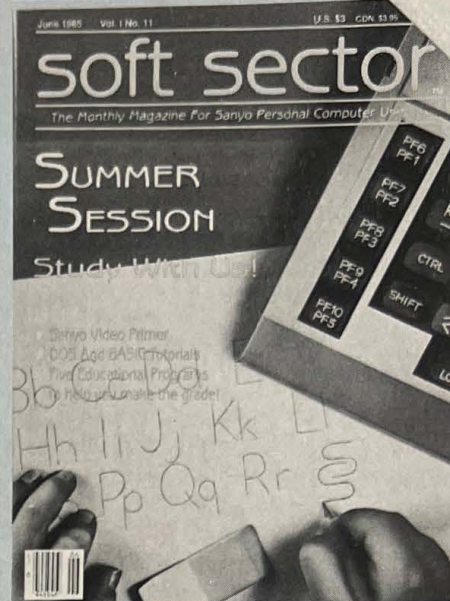
Q. I need to be able to access long prose files in *WordStar* by page number. There seems to be no way to get to Page 53 to change a word without either raising my temper and a blister on my "Page Down" finger, or by instituting a find command which must search its way through all the preceding text — a ridiculous waste of time and resources. Block markers are useless since they evaporate when the file is stored to disk, and any other kind of markers I create still require use of the find command. Does anyone, anywhere know a trick, or is there a fix which I can put in to enable direct page accessing? I don't want to invest megabucks into *WordStar* 2000 (plus the requisite hardware enhancements) for this one feature. I have a 555-2 with 256K of memory using *WordStar* 3.3 and *FastStar* 1.2.

Carla Kelly
Tampa, FL

A. The easiest way to have page numbering that can be found with *WordStar* would be as follows:

Use the Comment Dot Command ". Page #1" etc. No, this is not the most sophisticated way to do it, but it will work. The way to find your page will be to use the ^QF search function to search for "Page #1" or whatever page you need to find. The biggest problem is that you will have to insert the ". Page #1" information manually and if you ever make changes to large passages of text with block moves, you will have to go back and manually

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change the page numbers. They will not print, so at least they won't need to be removed.

I hope that this is a better solution than holding the "Page Down" key as you have to do now.

Q. Recently, I bought a Sanyo 775 computer and a Star SG-10 printer. I love them both, but about all I can get out of the system in the way of printed text is pica or near-letter quality pica. The reason for this is that I have not figured out how to configure the printer. It would be extremely helpful to me if I could learn how to print elite and also produce the various expanded print characters. I need to be able to mix them in the same document. I did get the SG-10 to print in italics just by setting the DIP switch.

James D. Wilkins
Grand Island, NE

A. According to the *EasyWriter* manual, if you select the "Type B Printer," an Epson emulation, your SG-10 should function properly. This information is from the *EasyWriter II* manual, Chapter 3.

The codes to turn italics on and off are as follows for your printer.

| Function | Star Mode | IBM Mode |
|---------------------|-----------|------------|
| Italics On Decimal | ESC 4 | ESC 11 |
| Italics Off Decimal | ESC 5 | ESC 10 |
| Italics On HEX | 27h 4h | 27h 49h 1h |
| Italics Off HEX | 27h 5h | 27h 49h 0h |

Remember, you must set the italics for the correct operating mode of the printer.

Q. I would like to use foreign language accents, i.e., French and German with my Sanyo 550 and my Epson-type printer (CP-80). Will WordStar handle it? If not, what word processing software will?

Richard Gorman M.D.
Toronto, Ontario

A. I do not have a good answer for you or any of the other readers who have written about using a dot-matrix printer to print the foreign accent characters from *WordStar* that most printers are capable of. I am not familiar with the CP-80 printer, but it must have a switch to change to the foreign character sets that are resident in the ROM. Have you tried this? If the printer is switched to the foreign character set, the printer should convert an English character to the appropriate character with accents.

I have heard of a company that has produced a word processor which has

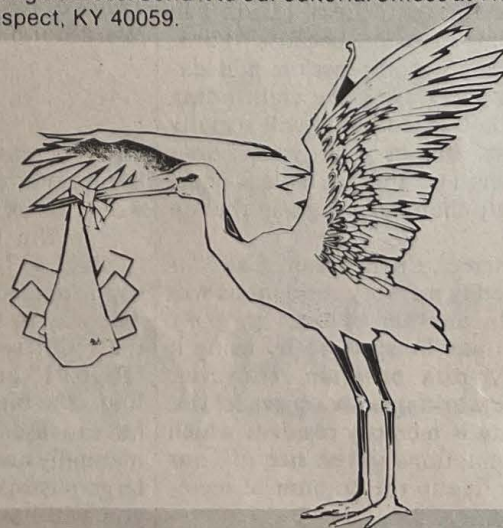
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French and Spanish versions and will put the information in the column as soon as it can be found.

Q. Recently, I began reviewing the first copies of *SOFT SECTOR*. The article by Brian Stone caught my eye immediately. "Your Printer Can Shine with WordStar" seemed to be exactly what I could use. My problem is that I can't even get it started. I no sooner get started when it locks up. I have a Sanyo MBC-555 with two double-sided drives, 256K and the Video RAM Board, DOS 2.11.

Step one: I format a blank disk using the IS option to get the DOS system files on it. Step two: I copy the file WS.COM to this new disk. Step three: I now put the new disk in Drive A and a copy of WordStar disk two of three, in Drive B. Why does it have to be write protected and what does that mean? Step four: I type "B:" and nothing happens. The cursor remains in Drive A. I assume the author wants to move the cursor to Drive B, so I type B which moves the cursor to Drive B. Step five: I type INSTALL and nothing happens. So I type INSTALL.COM and the computer locks up. I type INSTALL.OVR and the computer says "Trap at user PC FF50:0014." I type WS.INS and get a "bad

command" message. Those are all the files that are on WordStar disk two or three.

I experimented and used the WordStar program in Drive A and called up the files that are in Drive B. The file is called up but it is nothing but a jumble of symbols.

Am I correct in assuming that when this is done properly I can change to the various printing modes while I am in WordStar? If so, I am interested in using elite, condensed and enlarged.

Daniel Sheppard
Palm Harbor, FL

A. The instructions furnished in my original article were written to be as complete as possible and afford the new user as much protection as possible from ruining the original distribution disks of software. What I wanted the user to do was copy all of the WordStar files to a new bootable system disk. This disk was to include the INSTALL program to be able to make the appropriate changes to WordStar. I think most of your problems come from taking my instructions too literally. When I showed the reader to type "B:" this meant only type B: without the quote marks. The cursor will show B> when you have logged to Drive B but in most cases the activity light on the drive will not change to B.

The reason I suggested write protecting

the disks (covering the square notch on the side of the disk), was to protect you from making a mistake and erasing the master disk.

When all of the programs are on the new disk, you would type INSTALL and answer the questions by following the article. You cannot load any files with WordStar that end with .EXE or .COM because these are machine language or compiled programs. The only thing that WordStar will load are ASCII files, BASIC programs or .BAT files saved in ASCII. That's why all you got was a jumble of symbols.

You should be able to take the original article and, by substituting the codes for your Epson RX-80 from the manual, be able to accomplish elite, condensed and expanded typesets with your printer. Enlarged print will confuse WordStar because it does not know that it must compensate for double-wide characters; the results are quite unpredictable.

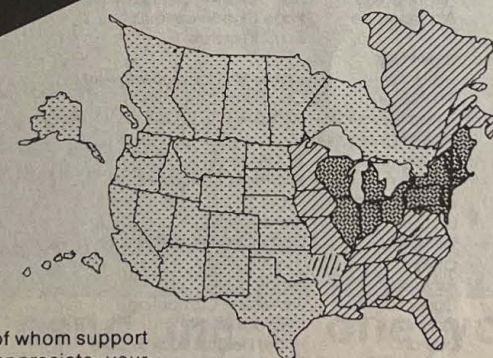
Charlotte Stone, office manager for the Detroit office of the Shaw/Walker Co., has been using a Sanyo computer in her daily work routine since October 1983. Brian Stone has been using a variety of Sanyo computers since May 1983. Both have been involved with computers since their first purchase in July 1978.



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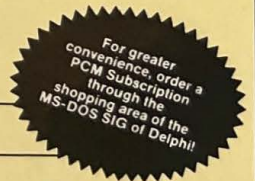
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